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SALARIES
OF
SCIENTISTS • ENGINEERS AND TECHNICIANS

A Summary of Salary Surveys

THIRTEENTH EDITION

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INTRODUCTION

Salary surveys are conducted by a number of organizations, including agencies and departments of the federal government, professional scientific and engineering organizations, educational associations, magazine publishers, other professional and trade associations and organizations. Some surveys deal directly with salaries of scientists and engineers, others cover broader occupational categories. Most salary surveys conducted by professional scientific and engineering societies cover only their membership. However, since such societies generally represent the majority of the population in their particular discipline, the results may be generalized to these professional populations. Some smaller salary surveys in specific disciplines are included for comparative purposes, as are surveys in occupations not specifically in science and/or engineering.

Although most of the salary data presented in this report are available from the original sources, this compilation brings together the information from a variety of sources both for purposes of comparison and for easier accessibility.

For a number of reasons, exact correlation of results of different surveys is generally not possible. Different methodologies are employed and differing populations are surveyed. The statistical reporting bases include medians, means, percentiles and ranges of one of these, which are not directly comparable. In addition to the "snapshot" characteristics of surveys, which provide information as of any given date, the time periods covered by the surveys include calendar year, fiscal year, academic year, and quarterly segments starting at various points in the year. The base and time period for each table is noted with the table and/or in the introductory statement for the section in which it appears.

Although no attempt has been made to evaluate the relative reliability of the various surveys, the number of people included in the statistics presented is given when known. In some cases, the number of respondents listed within a table will not match totals for all fields or all groups, either because some areas not applicable to science and engineering have been omitted, or because only selected variables have been included in the table.

The source of the data is given at the top of each table. Full bibliographic references for each data source begin on page 212. A cross-index beginning on page 216 and a detailed Table of Contents provide rapid access to specific salary information.

Generally, only the most current salary information is included from each data source. However, some trend data, usually limited to the survey immediately preceeding the current survey, are included for comparison. Long trend salary information may be examined by referring to earlier editions of this publication, which has been published biennially since 1964. Copies of some of the first twelve editions of **SALARIES OF SCIENTISTS, ENGINEERS AND TECHNICIANS - A SUMMARY OF SALARY SURVEYS** are available from the **Commission on Professionals in Science and Technology.**

This report was prepared by Eleanor L. Babco, Associate Director of the Commission on Professionals in Science and Technology. Special thanks are extended to Barbara P. Willard and the CPST staff for their invaluable assistance.

STARTING SALARIES

The **College Placement Council SALARY SURVEY - A STUDY OF 1986-87 BEGINNING OFFERS** reports starting salary data based on job offers, not acceptances, made to graduating college students at all degree levels in selected curricula and graduate programs during the recruiting period September 1, 1986 to June 5, 1987. Data are submitted throughout the year by 164 placement offices at 143 participating colleges and universities in the United States.

The final report of the 1986-87 recruiting year found job offers down considerably, but starting salaries were up 2 to 6 percent over the previous year. While the number of job offers reported at the bachelor's degree level dropped 24.2% from 32,965 to 24,990, the decrease did not occur in all fields, nor was the decrease spread evenly across all fields. The shift from a manufacturing to a service economy brought good news to liberal arts graduates. Humanities graduates received 29% more offers than last year, along with a salary average of $1,688 a month, up 5% from last year. Not surprisingly, the merchandising and services industry extended the majority of these offers, accounting for 53% of all offers to humanities graduates. By contrast, graduates in technical fields were faced with a tight job market with offers down in all fields. Petroleum engineering, the discipline that has consistently garnered the highest salary average, showed a 6.6% drop in average salary to $30,816, and a resounding 82% decrease in the number of job offers extended. The average salary for electrical engineers rose 2% to $28,920, but the number of job offers dropped 35%. Mechanical engineers went up only 1.6% to $28,308, but received 31% fewer job offers. The recruiting picture for computer science graduates this year was not as bright as in the past, with job offers down 28% and a slight drop in the average starting salary to $26,364. Of the business disciplines, marketing and distribution showed the only gain in both average starting salary - 5.7% to $20,364 - and the number of job offers - up 1%. Accounting graduates receiving a 2.5% higher average salary at $21,744, but 16% fewer job offers. Biological science graduates, who traditionally received the lowest dollar offers in the science disciplines, recorded salary increases of 14% to $21,816, and were replaced at the bottom of the salary schedule in the sciences by those graduates in agriculture at $19,788 (Table 1).

Men received nearly twice as many job offers at the bachelor's level as women - 16,111 to 8,879, although women earned at least half of the degrees awarded. However, in the humanities and social sciences disciplines, women received more job offers than men, but their average salary offers were considerably lower. As in the past, women fared slightly better in average salary offers than men in most engineering disciplines, but lower in all other disciplines. One of the widest salary gaps between men and women was in the biological sciences, where women received average starting salaries 11.2% lower than men (Table 2).

By functional area, the bulk of the offers to both men and women were for engineering and accounting/auditing jobs. The salary offer was also the highest in engineering - $2,360/month for men and $2,383/month for women. Next highest average dollar offers were made to male graduates working as computer scientists ($2,282/month), while women working as scientific researchers received the next highest salary offers ($2,251/month)(Table 3).

At the master's degree level, too, humanities graduates benefited from the recent shift in the economy. The average salary offer increased 16.2% to $22,644 and the number of job offers nearly doubled. MBA candidates with nontechnical undergraduate degrees experienced a 5.1% rise to $31,884, while those with technical undergraduate degrees went up 5.7% to $34,248. Among the engineering disciplines, electrical engineering headed up the winner's column, with the highest salary offer - $2,957/month. However, industrial engineering graduates received salary offers 5.2% less than in the previous year. In the sciences, both geoscience and mathematics graduates received salary offers that were down considerably from the previous year (Table 4).

At the doctoral level, average top dollar offers went to electrical and computer engineering graduates, up 3.1% to $3,965/month. While salary offers were up slightly to most graduates, salaries for metallurgical engineers and physicists at the doctoral level dropped 3.5% and 5.2% respectively (Table 5).

The general upward trend in starting salaries of new college graduates continues, according to the annual **1986 COLLEGE RECRUITING REPORT** by **Abbott, Langer & Associates,** which provides starting salaries of 8,778 graduates hired by more than 200 employers in 1986. Graduates of junior/community colleges with engineering-related degrees averaged 69% of the starting salary of comparable bachelor's graduates, with technical-related degrees averaging 70% and non-technical degrees averaging 84% of the bachelor's level. Two-year graduates receiving their degrees in data processing received the highest average salary, $1,609 per month, while those in the biological sciences received the lowest average salary of $1,305 per month (Table 6).

New baccalaureate graduates in engineering had average starting salaries of $2,272 per month, up only 1.1% over 1985. The highest paid engineering graduates specialized in metallurgical and chemical engineering ($2,567 and $2,429) and the lowest paid in agricultural and civil engineering ($1,802 and $1,976). Technical non-engineering graduates had average starting salaries of $2,075, up 0.9% from 1985. The highest paid curriculum was metallurgical engineering at $2,567, and the lowest biological sciences at $1,485 (Table 7).

At the master's level, engineering graduates averaged $2,622 per month, up 3.3% over 1985, with electrical engineering master's reporting the highest average of $2,877 per month and civil engineers the lowest - $2,159 per month. The highest average salaries were reported by electrical engineering graduates ($2,877), while the lowest salaries were received by marketing graduates ($1,650) (Table 8). MBA graduates with engineering undergraduate degrees averaged $3,049 per month, up 11%, while those with an undergraduate degree in accounting averaged $2,409 per month (Table 9).

At the doctoral level, electrical engineering graduates received the highest salary averages of $3,724 per month and mathematics/statistics graduates the lowest of the disciplines studied at $3,214 per month (Table 10). Starting salaries for bachelor's graduates by discipline and type of industry are shown in Tables 11 and 12.

College graduates in 1987 faced a tighter job market than in 1986, but were offered higher salaries according to **RECRUITING TRENDS 1986-87** by **John Shingleton** of **Michigan State University.** Overall, employers expected to hire 2.4% fewer college graduates in 1987 than in 1986. Although graduates with new technical degrees are still getting the highest salaries, demand for them is less than for graduates in other fields in 1986-87. The greatest increases in demand are for majors in hotel, restaurant and institutional management, up 2.9%. Highest starting salary offers are expected to go to electrical engineers at $29,680, followed by mechanical engineers at $29,636. The lowest starting salary offers were anticipated for those graduates in human ecology/home economics and journalism at $16,499 and $15,743 respectively. Overall, bachelor's graduates received starting salary offers of $21,815, master's graduates $26,628 and doctoral graduates $30,754 (Table 13).

The **NORTHWESTERN ENDICOTT-LINDQUIST REPORT 1987** is the 41st annual survey of employment trends for college and university graduates in business and industry. Data from 230 well-known business and industrial concerns in 30 states representing all major regions of the nation, indicate that job offers have dropped 12%, but acceptances are up 25%. Starting salaries are up slightly for 1986-87 college graduates. At the bachelor's level, engineering graduates will continue to receive the highest average starting salary - $2,411 per month, followed by chemistry graduates at $2,254. At the low end of the scale are graduates in sales/marketing at $1,618 per month (Table 14).

Starting salaries for inexperienced chemists have varied considerably from year to year. At the baccalaureate level, after two years of salary gains, median salaries decreased 3.6% for chemists and 0.7% for chemical engineers in 1986. Median monthly starting salaries for men and women bachelor's degree chemists from 1961 to 1986 are shown in Table 15. Although the gap between starting salaries for men and women has varied widely over the years, as early as 1982, men and women received the same median starting salary. However, in 1985, the gap had widen to 10.0%, but dropped in 1986 to 5.2%.in 1986 - $1,583 for men compared to $1,500 for women. Average starting salaries for M.S. chemists dropped 9% to $24,065, while the average for new Ph.D. chemists is up 6.1% to $39,107, according to the **American Chemical Society's STARTING SALARIES 1986**.

Where a chemist or chemical engineer works has an effect on starting salary. Regardless of degree level or sex, chemists and chemical engineers earn the most working in private industry and the least working in academic institutions (Tables 16 and 17).

Other factors affecting starting salaries for chemists and chemical engineers are area of specialization and years of professional experience. The highest average starting salary for master's degree chemists is in organic chemistry while doctoral degree physical chemists reported the highest salaries - $24,600 and $36,250 respectively (Table 18). Median annual salaries of chemists and chemical engineers by professional experience are shown in Table 19.

While male chemists received higher average starting salaries at the baccalaureate level in 1986, female chemists recorded higher salaries at both the master's and doctorate level. In chemical engineering, women received higher average starting salaries at both the bachelor's and doctorate level, while their male counterparts received higher salaries at the master's and doctorate levels (Table 20). Table 21 compares salaries paid to inexperienced chemists and chemical engineers in industry with those paid by all employers.

Industry continued to pay the highest median salary to new physics degree recipients regardless of degree level, according to the **EMPLOYMENT SURVEY 1985**, the **1985-86 SURVEY OF PHYSICS AND ASTRONOMY BACHELOR'S DEGREE RECIPIENTS** and **1984-85 GRADUATE STUDENT SURVEY** by the **American Institute of Physics.** (Tables 22, 23 and 24). Women reported higher starting salaries at the baccalaureate level - $2,160 and $1,860 respectively

The 1986 annual **SALARY SURVEY FOR NEW RECIPIENTS OF DOCTORATES** by the **American Mathematical Society** found that business and industry continued to pay the highest starting salaries and academic institutions the lowest to new doctorates in mathematics (Tables 25 and 26). Regardless of type of employer or type of activity, women received lower starting salaries than men

Robert Half Inc. has been conducting a study of **PREVAILING FINANCIAL AND DATA PROCESSING STARTING SALARIES** since 1950. The 1987 survey finds that salaries in data processing are up to record levels based on an industry-wide analysis of thousands of position requests received by **Robert Half** offices throughout the U.S. Generally, salaries paid to data processing personnel are higher in larger companies than in medium size companies. By position, telecommunications managers in both medium and large companies reported the largest salary increases, 17.1% and 15.4%, while input/output clerks in medium size companies reported no increase, (Tables 27 and 28). Average starting salary ranges for data processing personnel in small companies are reported in Table 29.

The eighteenth annual **NATIONAL SURVEY OF COMPENSATION PAID SCIENTISTS AND ENGINEERS ENGAGED IN RESEARCH AND DEVELOPMENT ACTIVITIES**, conducted by the **Battelle Columbus Laboratories** for the **U. S. Department of Energy**, finds that engineers continue to lead all other disciplines in highest starting salaries regardless of degree level in 1986 (Table 30). Those bachelor's degree engineers working in metallurgical engineering received the highest average starting salaries - $2,667 per month while those working in aerospace engineering recorded the lowest - $2,231 per month (Table 31).

The **U. S. Department of Labor's OCCUPATIONAL OUTLOOK HANDBOOK** includes information on starting salaries as well as estimates of the number of people employed in various fields. The most recent salary and employment information in selected scientific and engineering fields is summarized in Table 32.

SOURCE: The College Placement Council, CPC Salary Survey - A Study of 1986-87 Beginning Offers, Formal Report, No. 3, July 1987.

TABLE 1

NUMBER AND AVERAGE STARTING MONTHLY SALARY OFFERS TO INEXPERIENCED BACHELOR'S DEGREE CANDIDATES BY CURRICULUM, JULY 1986 AND JULY 1987

CURRICULUM	No. Offers		Average $ Offers		Percent Change in $ offers
	1987	1986	July 1987	July 1986	July 1986
BUSINESS					
Accounting	5,478	6,575	$1,812	$1,768	2.5%
Business Admin. & Mgmt	1,788	1,934	1,701	1,638	3.9
Management Info. Systems	524	607	1,979		4.0
Marketing & Distribution	1,852	1,835	1,697	1,606	5.7
ENGINEERING					
Aerospace & Aeronautical	343	571	2,315	2,230	1.2
Chemical	1,070	1,422	2,438	2,438	2.0
Civil**	817	1,299	2,011	2,011	1.3
Electrical (including Computer Engineering)	4,527	6,963	2,364	2,364	2.0
Geological	20	42	1,883	1,883	4.8
Industrial	726	1,093	2,254	2,254	1.4
Mechanical	2,460	3,552	2,322	2,322	1.6
Metallurgical (includes Metallurgy & Ceramic Eng.)	157	193	2,322	2,322	4.1
Mining & Mineral	9	14	2,163	2,163	*
Nuclear (includes) Engineering Physics)	34	82	2,308	2,308	3.1
Petroleum	60	333	2,568	2,750	-6.6
Technology	254	608	2,183	2,183	0.1
HUMANITIES & SOCIAL SCIENCES					
Humanities	854	660	1,688	1,608	5.0
Economics***	697	743	1,970	1,867	5.5
Other Social Sciences	744	797	1,823	1,665	9.5
SCIENCES					
Agricultural Sciences	124	161	1,649	1,597	3.3
Allied Health Prof.	47	65	2,040	1,702	19.8
Biological Sciences	73	73	1,818	1,589	14.4
Chemistry	36	149	2,131	1,948	9.4
Computer Science	1,894	2,644	2,197	2,216	-0.9
Mathematics	352	413	2,162	2,037	6.1
Other Physical & Earth Sciences	50	137	2,001	2,100	-4.7

*** Includes economics programs with both business and social science orientation.

** Includes Construction, Sanitary, & Transportation Engineering.

* Not Available.

SOURCE: The College Placement Council, CPC Salary Survey - A Study of 1986-87 Beginning Offers, Formal Report, No. 3, July 1987

TABLE 2

NUMBER AND AVERAGE STARTING MONTHLY SALARY OFFERS TO BACHELOR'S DEGREE CANDIDATES BY CURRICULUM AND SEX, July 1986 AND July 1987

CURRICULUM	No. Offers July 1987		Average $ Offers July 1987		No. Offers July 1986		Average $ Offers July 1986	
	Men	Women	Men	Women	Men	Women	Men	Women
BUSINESS								
Accounting	2,793	2,685	$1,817	$1,807	3,436	3,139	$1,771	$1,766
Business Admin. & Mgmt.	993	795	1,739	1,653	1,108	826	1,674	1,590
Mgmt. Info. Systems	293	231	1,975	1,983	355	252	1,915	1,887
Marketing and Distribution	914	938	1,716	1,678	924	911	1,649	1,562
ENGINEERING								
Aerospace & Aeronautical	300	43	2,334	2,405	505	66	2,310	2,348
Chemical	726	344	2,482	2,499	1,005	417	2,427	2,462
Civil*	654	163	2,412	2,042	1,094	205	2,011	2,010
Electrical**	3,770	757	2,036	2,402	5,796	1,167	2,362	2,371
Geological	15	5	1,869	2,284	36	6	1,852	2,073
Industrial	403	323	2,263	2,313	700	393	2,246	2,268
Mechanical	2,073	387	2,351	2,396	3,052	500	2,317	2,348
Metallurgical+	103	54	2,400	2,450	146	47	2,321	2,326
Mining & Mineral	8	1	2,232	2,306	14	-	2,163	-
Nuclear (incl. Engineering Physics)	28	6	2,367	2,435	75	7	2,312	2,267
Petroleum	50	10	2,566	2,576	292	41	2,751	2,747
Technology	245	9	2,186	2,144	571	37	2,182	2,195
HUMANITIES AND SOCIAL SCIENCES								
Humanities	432	265	2,007	1,910	277	383	1,702	1,541
Economics++	360	494	1,794	1,610	470	273	1,922	1,771
Other Social Sciences	347	397	1,919	1,738	370	427	1,812	1,538
SCIENCES								
Agricultural	93	31	1,671	1,580	122	39	1,603	1,578
Biological	43	30	1,906	1,693	39	34	1,615	1,559
Chemistry	23	13	2,186	2,033	80	69	1,960	1,933
Computer	1,201	693	2,212	2,169	1,622	1,022	2,234	2,188
Allied Health Professions	15	32	2,091	2,066	9	56	1,697	1,703
Mathematics	195	157	2,220	2,089	213	200	2,052	2,020
Other Physical & Earth Sciences	34	16	2,056	1,885	100	37	2,111	2,074

*Includes Construction, Sanitary & Transportation Engineering

**Includes Computer Engineering

+Includes Metallurgy and Ceramic Engineering

++Includes Economics programs with both Business and Social Science Orientation

SOURCE: The College Placement Council, CPC Salary Survey - A Study of 1986-87 Beginning Offers, Formal Report, No. 3, July 1987

TABLE 3

NUMBER AND AVERAGE MONTHLY SALARY OFFERS TO BACHELOR'S DEGREE CANDIDATES BY FUNCTIONAL AREA AND SEX, JULY 1986 AND JULY 1987

FUNCTIONAL AREA	No. Offers July 1987		Average $ Offers July 1987		No. Offers July 1986		Average $ Offers July 1986	
	Men	Women	Men	Women	Men	Women	Men	Women
ADMINISTRATIVE/MANAGEMENT OCCUPATIONS								
Accountants/Auditors	2,783	2,663	$1,820	1,809	3,400	3,094	$1,770	$1,765
Banking	197	198	1,923	1,856	*	*	*	*
Business Administration	155	282	1,773	1,585	222	276	1,749	1,528
Consultants	385	224	2,194	2,094	*	*	*	*
Financial Analysts (Finance & Economics)	322	218	2,277	2,124	362	210	2,080	1,944
Management Trainee	1,056	973	1,707	1,622	1,363	1,301	1,715	1,586
Human Resources	49	82	1,701	1,468	39	73	1,707	1,587
COMPUTER/MATHEMATICAL OCCUPATIONS								
Computer Programmers	679	381	2,163	2,125	848	594	2,125	2,089
Computer Scientists†	717	496	2,282	2,187	1,118	714	2,266	2,214
Mathematicians/ Statisticians	117	74	2,218	2,050	137	122	2,000	1,968
MARKETING & SALES OCCUPATIONS								
Advertising/Marketing	321	315	1,838	1,776	292	241	1,768	1,617
Retail/Wholesale Sales	612	493	1,746	1,642	721	472	1,679	1,577
Technical Sales	258	83	1,931	1,896	270	110	1,882	1,754
ALL OTHER OCCUPATIONS								
Communications	51	64	1,636	1,413	70	77	1,744	1,537
Engineers	7,912	1,964	2,360	2,383	12,768	2,743	2,321	2,344
Farm & Natural Resources Mgmt.	46	21	1,583	1,692	46	18	1,649	1,656
Health-Related	21	42	2,055	1,882	16	60	1,481	1,648
Insurance & Real Estate	187	143	1,711	1,652	151	116	1,665	1,594
Production	108	58	1,934	1,887	198	61	2,057	1,886
Researchers/Nonscientific	12	9	2,075	2,000	113	110	1,930	1,781
Researchers/Scientific	14	15	2,104	2,251	177	96	2,107	1,951
Social Workers & Recreational Workers	33	51	1,350	1,271	21	50	1,261	1,220
Transportation & Distribution	76	79	1,885	1,846	79	16	1,852	1,618

*Not Available. †Includes Systems Analysts.

** Formerly Personnel & Labor Relations

SOURCE: The College Placement Council, CPC Salary Survey - A Study of 1986-87 Beginning Offers, No. 3, July 1987.

TABLE 4

NUMBER AND AVERAGE STARTING MONTHLY SALARY OFFERS TO INEXPERIENCED MASTER'S DEGREE CANDIDATES BY CURRICULUM, JULY 1986 AND JULY 1987

CURRICULUM	Number Offers July 1987	Average $ Offers		Percent Change in $ Offers from July 1986
		July 1987	July 1986	
ENGINEERING				
Chemical	96	$2,813	$2,678	5.0
Civil **	81	2,413	2,391	0.9
Electrical (inc. Computer Engrg)	459	2,957	2,851	3.7
Industrial	54	2,566	2,707	-5.2
Mechanical	235	2,835	2,740	3.5
Metallurgical (inc. Metallurgy & Ceramic Engineering)	36	2,702	2,722	-0.7
Nuclear (including Engrg. Physics)	18	2,866	2,933	-2.3
SCIENCES				
Chemistry	25	2,333	2,333	0.0
Computer Science	241	2,817	2,777	1.4
Geology & Related Geo. Sciences	16	2,200	2,542	-13.5
Mathematics	52	2,329	2,548	-8.6
BUSINESS				
Accounting	314	2,163	2,132	1.5
MBA - Non-Technical Undergraduate				
Less than 1 year	714	2,657	2,529	5.1
Over 1 to 2 years*	385	2,982	2,828	5.5
Over 2 to 4 years*	594	3,318	3,032	9.4
Over 4 years*	297	3,226	3,145	2.6
MBA - Technical Undergraduate				
Less than 1 year	229	2,854	2,699	5.7
Over 1 to 2 years*	155	3,128	2,888	8.3
Over 2 to 4 years*	260	3,492	3,161	10.5
Over 4 years*	167	3,574	3,203	11.6
MS - Business (inc. Management Marketing, Finance, etc.)	91	2,384	2,337	2.0
Industrial Management (inc. Indus. Management)	62	2,735	2,481	10.2
Administration (inc. Public, Hospital, etc)	38	2,226	2,037	9.3
HUMANITIES AND SOCIAL SCIENCES				
Humanities	65	1,883	1,624	16.2
Social Sciences	50	1,833	1,754	4.5

* Years of previous full-time, non-military employment.

** Includes Construction, Sanitary, & Transportation Engrg.

SOURCE: The College Placement Council, CPC Salary Survey - A Study of 1984-85 Beginning Offers, Formal Report, No. 3, July 1987.

TABLE 5

NUMBER AND AVERAGE STARTING MONTHLY SALARY OFFERS TO DOCTORAL DEGREE CANDIDATES BY CURRICULUM, JULY 1986 AND JULY 1987

CURRICULUM	Number Offers		Average $ Offers		Percent Change in $ Offers from 1986
	July 1987	July 1986	July 1987	July 1986	
ENGINEERING					
Chemical	151	118	$3,605	$3,557	1.4
Civil*	3	11	3,336	2,892	**
Electrical (inc. Computer Engrg)	83	100	3,965	3,845	3.1
Mechanical	46	43	3,569	3,435	3.9
Metallurgical (inc. Metallurgy, Mat. Engrg. & Sci., and Ceramics)	26	34	3,357	3,479	-3.5
SCIENCES					
Chemistry	148	137	3,202	3,113	2.9
Mathematics (inc. Operations Research, Stat. & Actuarial Sci.)	12	27	3,328	3,292	*
Physics	43	55	3,345	3,527	-5.2

* Includes Construction, Sanitary, & Transportation.
**Not computed for less than 20 offers.

SOURCE: Abbott, Langer & Associates, College Recruiting Report, 1986.

TABLE 6

NUMBER AND MONTHLY STARTING SALARIES OF INEXPERIENCED COLLEGE GRADUATES WITH JUNIOR/COMMUNITY COLLEGE DEGREES BY DISCIPLINE, 1986

DISCIPLINE	Number	Mean	Median
All Engineering - Related	147	$1,560	$1,555
Engineering Technology	36	1,576	1,587
Electronic Technology	92	1,550	1,555
Mechanical Technology	19	1,581	1,563
Biological Sciences	17	1,305	1,167
Computer Programming	29	1,525	1,611
Data Processing	11	1,609	1,490
Drafting	19	1,364	1,390
Accounting	9	1,377	1,304
Business Administration	16	1,419	1,315
All Technical - Related	90	1,456	1,508
All Non-Technical - Related	29	1,390	1,304

SOURCE: Abbott, Langer & Associates, College Recruiting Report, 1986.

TABLE 7

NUMBER AND MONTHLY STARTING SALARIES OF INEXPERIENCED COLLEGE GRADUATES WITH BACHELOR'S DEGREES BY DISCIPLINE, 1986

DISCIPLINE	Number	Mean	Median
All Engineering	1,840	$2,272	$2,336
Aeronautical Engineering	9	2,395	2,400
Agricultural Engineering	7	1,802	2,019
Chemical Engineering	111	2,429	2,504
Civil Engineering	331	1,976	2,028
Computer Science (Engineering Related)	83	2,358	2,410
Electrical Engineering	573	2,350	2,359
Industrial Engineering	149	2,247	2,300
Mechanical Engineering	464	2,338	2,366
Metallurgical Engineering	5	2,567	2,360
Nuclear Engineering	8	2,399	2,414
Science (Engineering)	14	2,327	2,479
Biological Sciences	29	1,485	1,260
Chemistry	32	1,885	1,963
Computer Science (Sci./Tech. Related)	512	2,040	2,005
Pharmacy (Registered)	270	2,266	2,250
Mathematics-Statistics	158	1,915	2,000
Physics	7	2,224	2,200
Accounting	628	1,674	1,750
Agriculture	111	1,502	1,542
Bus., Economics & Finance	2,112	1,585	1,517
Computer Science (Business Related)	498	1,925	1,872
Education	31	1,648	1,583
Industrial Management	52	1,707	1,708
Liberal Arts	441	1,721	1,666
Marketing	613	1,637	1,666
All Technical (Non-Eng.)	1,081	2,075	2,165
All Non-Technical	4,875	1,650	1,627

TABLE 8

NUMBER AND MONTHLY STARTING SALARIES OF INEXPERIENCED COLLEGE GRADUATES WITH MASTER'S DEGREES (EXCLUDING MBA) BY DISCIPLINE, 1986

DISCIPLINE	Number	Mean	Median
All Engineering	175	$2,622	$2,650
Chemical Engineering	31	2,645	2,810
Civil Engineering	27	2,159	2,029
Electrical Engineering	43	2,877	2,850
Mechanical Engineering	34	2,672	2,650
Computer Science	20	2,636	2,530
Computer Sci.(Sci./Tech Related)	28	2,464	2,393
Computer Sci.(Business Related)	17	2,444	2,616
Mathematics-Statistics	10	2,401	2,472
Physics	8	2,481	2,340
Biological Sciences	6	2,016	2,157
Accounting	18	1,733	1,562
Business, Economics & Finance	23	1,832	1,375
Marketing	18	1,650	1,375
All Technical (Non-Engineering)	87	2,384	2,393
All Non-Technical	116	1,941	2,066

TABLE 9

NUMBER AND MONTHLY STARTING SALARIES OF INEXPERIENCED COLLEGE GRADUATES WITH MBA DEGREES AND UNDERGRADUATE DEGREES BY DISCIPLINE, 1986

DISCIPLINE	Number	Mean	Median
All Engineering	19	$3,049	$3,250
Accounting	5	2,409	2,315
Bus., Econ. & Finance	143	2,586	2,764
Computer Science	9	2,223	2,135
Marketing	63	3,173	3,306
All Tech. (Non-Eng.)	7	2,381	2,460
All Non-Technical	234	2,732	2,764

TABLE 10

NUMBER AND MONTHLY STARTING SALARIES OF INEXPERIENCED COLLEGE GRADUATES WITH DOCTORAL DEGREES BY DISCIPLINE, 1986

DISCIPLINE	Number	Mean	Median
All Engineering	40	$3,404	$3,532
Chemical Engineering	15	3,497	3,565
Electrical Engineering	5	3,724	3,575
Chemistry	13	3,270	3,295
Mathematics/Statistics	7	3,214	3,250
All Technical (Non-Eng.)	35	3,167	3,178

SOURCE: Abbott, Langer & Associates, College Recruiting Report, 1986.

TABLE 11

MEDIAN MONTHLY STARTING SALARIES OF INEXPERIENCED BACHELOR'S GRADUATES (NON-ENGINEERING) BY TYPE OF INDUSTRY AND DISCIPLINE, 1986

TYPE OF INDUSTRY	DISCIPLINE											
	Industrial Management	Biological Sciences	Chemistry	Computer Science (Sci-Tech Related)	Math./Stats.	Accounting	Agriculture	Bus. Econ. & Finance	Liberal Arts	Marketing	All Technical (Non-Eng'r.)	All Non-Technical
TOTAL	**$1,708**	**$1,260**	**$1,963**	**$2,005**	**$2,000**	**$1,750**	**$1,542**	**$1,517**	**$1,666**	**$1,666**	**$2,165**	**$1,627**
All Manufacturing/Extractive Firms	1,708	1,583	1,963	2,285	2,370	1,770	1,542	1,667	1,800	1,842	2,250	1,775
All Non-Manufacturing Firms	1,583	1,223	1,900	2,005	1,825	1,750	1,425	1,509	1,666	1,608	2,075	1,598
Accounting Firms, Public						1,788						1,788
Banking & Other Financial Firms						1,625		1,700		1,475		1,700
Chemical/Pharmaceutical/Plastic Rubber Product Manufacturers			1,963	2,260		1,850		1,850			1,963	1,850
Communications Services				2,165	2,075	1,855		2,140		1,970	2,165	2,140
Computer/Data Processing Services				2,005							2,005	
Construction & Engineering Firms				1,720		1,763		1,595			1,769	1,595
Electrical/Aerospace/Aircraft/Electronics Product Manufacturers				2,285	2,390	1,833		1,793			2,285	1,829
Fabricated Metal Product Mfg.												1,725
Food/Beverage/Tobacco Product Mfg.		1,583	1,963			1,917	1,542	1,868	1,790	1,842	2,533	1,842
Governmental Organizations				2,150		1,342					1,485	1,342
Hospitality Firms (food, lodging & rec.)												1,417
Insurance Firms					1,750	1,608		1,541	1,625	1,617	1,750	1,630
Machinery & Heavy Equipment Mfg.								1,750		1,665		1,750
Merchandising Firms (retail & wholesale)	1,583					1,583		1,417	1,867	1,650	2,250	1,583
Paper Product Mfg./Printers/Publishers								1,750				1,750
Petroleum/Natural Gas Firms						1,700				1,917		1,700
Research Organizations								1,225			1,618	1,225
Transportation Services						1,900					1,900	1,900
Utilities						1,800		1,800	1,921		1,663	1,800

NOTE: Blanks indicate fewer than 5 cases reported.

SOURCE: Abbott, Langer & Associates, College Recruiting Report, 1986.

TABLE 12

MEDIAN MONTHLY STARTING SALARIES OF INEXPERIENCED BACHELOR'S GRADUATES IN ENGINEERING BY TYPE OF INDUSTRY AND SUB-DISCIPLINE, 1986

TYPE OF INDUSTRY	SUBDISCIPLINE IN ENGINEERING						
	ALL	Aero-nautical	Chemical	Civil	Electrical	Indus-trial	Mechanical
TOTAL	**$2,336**	**$2,400**	**$2,504**	**$2,028**	**$2,359**	**$2,300**	**$2,366**
All Mfg./Extractive Firms	2,369	2,400	2,504	2,166	2,417	2,300	2,366
All Non-Mfg. Firms	2,275		2,290	2,028	2,336	2,200	2,300
Chemical/Pharmaceutical/Plastic/Rubber Product Manufacturers	2,526		2,526				2,444
Communications Services	2,385				2,440	2,350*	2,132
Construction & Engineering Firms	2,036		2,157*	2,036	2,300		2,400
Electrical/Aerospace/Aircraft/ Electronics Product Manufacturers	2,400	2,400	2,400		2,417	2,300	2,300
Fabricated Metal Product Manufacturers	2,280		2,330*		1,790*		
Governmental Organizations (Federal, State, & Local)	1,768			1,768			
Food/Beverage/Tobacco Prod. Manufacturers	2,417					1,996*	2,369
Machinery & Heavy Equip. Manufacturers	2,369						
Merchandising Firms (Retail & Wholesale)	1,930						
Paper Prod. Manufacturers/Printers/Publishers	2,363						
Research Organizations	2,241				2,241		2,361
Utilities	2,359		2,436*	2,381	2,414		2,300
Petroleum/Natural Gas--Extracting/Refining	2,541		2,583				
Transportation Services	2,247			2,200	2,450		2,350

* Only four respondents. NOTE: Blanks indicate fewer than 5 cases reported.

[14] Source: *Recruiting Trends 1986-87*, Michigan State University, December 2, 1986

TABLE 13

ESTIMATED STARTING SALARY OFFERS & ESTIMATED % CHANGE FOR BACCLAUREATE GRADUATES BY ACADEMIC MAJOR, 1986-87

ACADEMIC MAJOR	SALARY	% CHANGE
Electrical Engineering	$29,680	2.6
Mechanical Engineering	29,636	2.2
Chemical Engineering	29,254	1.9
Metallurgy/Materials Science	28,309	1.6
Computer Science	28,087	2.5
Industrial Engineering	27,643	2.2
Civil Engineering	25,399	1.9
Chemistry	23,474	2.1
Physics	21,269	2.0
Accounting	21,037	2.5
Marketing/Sales	20,809	2.5
Mathematics	20,804	2.2
Financial Administration	20,517	2.2
General Business Administration	19,643	2.3
Agriculture	19,293	1.4
Personnel Administration	19,267	2.0
Telecommunication	18,730	1.6
Advertising	18,307	1.7
Geology	18,184	1.5
Social Science	17,939	1.9
Hotel, Restaurant & Institutional Management	17,899	1.8
Education	17,874	3.1
Communications	17,853	1.6
Natural Resources	17,077	1.3
Liberal Arts/Arts & Letters	16,975	1.9
Retailing	16,672	1.7
Human Ecology/Home Economics	16,499	1.6
Journalism	15,743	1.4
ALL MAJORS		
Bachelor's	**21,815**	**2.9**
Master's	**26,628**	**2.9**
Ph.D.	**30,754**	**2.5**

SOURCE: Northwestern Endicott Lindquist Report, 1987, Forty-First Annual Report, by Victor R. Lindquist.

TABLE 14

NUMBER AND AVERAGE MONTHLY STARTING SALARIES FOR NEW GRADUATES BY FIELD AND DEGREE, 1986 AND 1987

FIELD	BACHELOR'S DEGREE				MASTER'S DEGREE			
	No. to be hired in 1987	1986	1987	Percent Increase	No. to be hired in 1987	1986	1987	Percent Increase
Engineering (132)	8,494	$2,368	$2,411	1.8	1,011	$2,709	$2,758	1.8
Accounting (122)	7,751	1,815	1,876	3.4	1,064	2,182	2,287	4.8
Sales-Marketing (85)	1,925	1,618	1,686	4.2				
Business Administration (80)	3,034	1,821	1,831	0.5				
Liberal Arts (54)	1,296	1,701	1,709	0.5				
Chemistry (42)	388	2,127	2,254	6.0				
Math or Statistics (34)	250	2,099	2,129	1.4				
Economics or Finance (58)	411	1,833	1,832	-0.1				
Computer Science (109)	3,291	2,134	2,190	2.6				
Other Fields (49)	1,225	1,809	1,829	1.1	468	2,289	2,331	1.8
MBA with Technical BS					299	2,957	2,913	-1.5
MBA with Non-Technical BA					923	2,809	2,840	1.1
Other Technical Fields					410	2,530	2,526	-0.2

NOTE: Number in parenthesis indicates companies hiring bachelor's level graduates in 1987.

SOURCE: CHEMICAL AND ENGINEERING NEWS, American Chemical Society, November 5, 1962; October 28, 1963; November 9, 1964; October 18, 1965; October 23, 1967; October 28, 1985; 1979 Survey Report, Starting Salaries and Employment Status of Chemistry and Chemical Engineering Graduates; & Starting Salaries 1980, 1981,1982, 1983, 1984, 1985, and 1986.

TABLE 15

MEDIAN MONTHLY STARTING SALARIES FOR MEN AND WOMEN CHEMISTS*, BACHELOR'S LEVEL, 1961-1986

YEAR	MEN	WOMEN	% BELOW MEN
1961	$500	$433	13.4
1962	525	450	14.3
1963	550	473	14.0
1964	560	480	14.3
1965	590	499	15.4
1966	625	550	12.0
1967	660	600	10.0
1968	712	625	12.2
1969	750	702	6.4
1970	758	644	15.0
1971	691	650	5.9
1972	708	650	8.2
1973	750	708	5.6
1974	816	833	+2.1
1975	833	801	3.8
1976	900	908	+0.9
1977	1,000	1,000	0.0
1978	1,042	1,083	+3.9
1979	1,200	1,233	+2.8
1980	1,250	1,250	0.0
1981	1,417	1,541	+8.8
1982	1,417	1,417	0.0
1983	1,417	1,333	5.9
1984	1,583	1,542	2.6
1985	1,667	1,500	10.0
1986	1,583	1,500	5.2

* Includes only members of the American Chemical Society.

SOURCE: American Chemical Society, Starting Salaries 1986

TABLE 16

NUMBER AND MEDIAN STARTING SALARIES OF INEXPERIENCED CHEMISTS* EMPLOYED FULL-TIME BY HIGHEST DEGREE EARNED, TYPE OF EMPLOYER AND SEX, 1986

TYPE OF EMPLOYER	MEN			WOMEN		
	B. S.	M. S.	Ph. D.	B. S.	M. S.	Ph. D.
Private Industry	(64) $20,000	(5) $26,850	(281) $38,250	(43) $20,000	(9) $28,200	(4) $40,000
College or University	(6) 14,500	(3) 16,500	(6) 23,000	(7) 15,000		
High School	(4) 16,200			(8)		
State or Local Government	(5) 19,020			(3) 17,824		
Hospital or Laboratory	(5) 15,000			(5) 14,000		
Other	(98) 19,000	(10) 22,106	(361) 37,650	(69) 18,000	(10) 27,900	(7) 28,000

NOTE: Blanks indicate insufficient data.

* Includes only members of the American Chemical Society.

TABLE 17

NUMBER AND MEDIAN STARTING SALARIES OF INEXPERIENCED CHEMISTS* AND CHEMICAL ENGINEERS* EMPLOYED FULL-TIME BY DEGREE LEVEL AND TYPE OF EMPLOYER, 1986

TYPE OF EMPLOYER	CHEMISTS			CHEMICAL ENGINEERS		
	B. S.	M. S.	Ph. D.	B. S.	M. S.	Ph. D.
Private Industry	(107) $20,000	(14) $28,200	(32) $38,750	(373) $29,000	(37) $31,200	(32) $41,950
College or Unversity	(13) 15,000	(3) 16,500	(7) 22,000	(5) 17,000		(16) 35,250
High School	(5) 18,500	(2) 20,750				
Federal Government	(6) 17,000		(3) 26,316	(18) 23,170		
State or Local Government	(8) 18,517			(23) 23,000		
Hospital or Lab	(10) 14,845					
All Employers	(167) 18,700	(20) 26,100	(43) 38,000	(455) 28,360	(42) 31,000	(49) 41,500

NOTE: Blanks indicate insufficient data.

* Includes only members of the American Chemical Society.

SOURCE: American Chemical Society, Starting Salaries 1986

TABLE 18

MEDIAN AND MEAN ANNUAL STARTING SALARIES OF INEXPERIENCED GRADUATE CHEMISTS* BY FIELD OF HIGHEST DEGREE, 1986

FIELD OF HIGHEST DEGREE	M. S.		Ph.D.	
	Median	Mean	Median	Mean
Analytical	$26,220	$24,271	$36,000	$31,457
Inorganic			37,250	35,040
Organic	27,450	24,600	38,000	35,215
Physical			39,400	36,250
All Fields	26,100	24,065	38,000	35,107

* Includes only members of the American Chemical Society.

NOTE: Blanks indicate less than 3 responses.

TABLE 19

MEDIAN ANNUAL STARTING SALARIES OF CHEMISTS* AND CHEMICAL ENGINEERS* BY DEGREE LEVEL AND PROFESSIONAL EXPERIENCE, 1986

DEGREE LEVEL	PROFESSIONAL EXPERIENCE			
	<12 Months	12-36 Months	>36 Months	TOTAL
CHEMISTS				
B. S.	$18,600	$19,500	$26,750	$19,000
M. S.	26,100	25,900	32,000	28,500
Ph. D.	38,000	35,000	39,000	37,200
CHEMICAL ENGINEERS				
B. S.	28,360	30,000	26,000	28,600
M. S.	31,000	31,368	41,940	31,800
Ph. D.	41,500	43,500	41,900	42,000

*Includes only members of the American Chemical Society.

TABLE 20

MEDIAN AND MEAN ANNUAL STARTING SALARIES OF INEXPERIENCED CHEMISTS AND CHEMICAL ENGINEERS* EMLOYED FULL-TIME BY HIGHEST DEGREE EARNED AND SEX, 1986

HIGHEST DEGREE EARNED	CHEMISTS				CHEMICAL ENGINEERS			
	Men		Women		Men		Women	
	Median	Mean	Median	Mean	Median	Mean	Median	Mean
Bachelor's	$19,000	$19,242	$18,000	$18,641	$28,200	$26,782	$28,750	$27,161
Master's	22,106	21,145	27,900	26,985	31,000	30,324	31,000	28,563
Doctorate	37,650	35,078	38,000	35,259	41,250	39,528	42,000	39,229

* Includes only members of the American Chemical Society.

SOURCE: American Chemical Society, Starting Salaries, 1986, July 1986.

TABLE 21

COMPARISON OF MEDIAN STARTING SALARIES OF INDUSTRIAL AND ALL CHEMISTS AND CHEMICAL ENGINEERS* EMPLOYED FULL-TIME BY DEGREE LEVEL AND SEX, 1986

	CHEMISTS			CHEMICAL ENGINEERS		
	B.S.	M.S.	Ph.D.	B.S.	M.S.	Ph.D.
ALL EMPLOYERS	$18,600	$26,100	$38,000	$28,360	$31,000	$41,500
Men	19,000	22,106	37,650	28,200	31,000	41,250
Women	18,000	27,900	38,000	28,750	31,000	42,000
IND. EMPLOYERS	20,000	28,200	38,750	29,000	31,200	41,950
Men	20,000	26,850	38,259	29,000	31,800	41,770
Women	20,000	28,200	40,000	29,450	31,000	42,000

* Includes only members of the American Chemical Society.

SOURCE: American Institute of Physics, Employment Survey 1985, December 1986

TABLE 22

MEDIAN MONTHLY STARTING SALARIES OF NEW PHYSICS GRADUATES BY DEGREE LEVEL AND TYPE OF EMPLOYER, JANUARY 1986

TYPE OF EMPLOYER	BACHELOR'S		MASTER'S		PH.D.	
	New	Con't.*	New	Con't.*	New	Postdoc
Secondary School	$1,210	$	$	$1,575	$	$
Four-Year College			1,875		2,000	
University			1,900	2,040	2,300	1,800
Industry					3,400	3,000
Manufacturing	2,160	2,250	2,500	2,660		
Service	2,000	1900	2,500			
Military	1,590	2,150	2,050	2,500		
FFRC**					3,225	2,100
Civil Government	1,890	2,000	2,025	2,100	2,750	2,165
Other	1,600	2,300	2,435		2,800	2,200
ALL EMPLOYERS	**1,920**	**2,100**	**2,445**	**2,400**	**3,120**	**1,950**

*Working in Postitions Previously Held ** Federally Funded Research Centers

SOURCE: American Institute of Physics, 1985-86 Survey of Physics and Astronomy Bachelor's Degree Recipients, AIP Pub. R-211.18, April, 1987.

TABLE 23

DISTRIBUTION AND MEDIAN MONTHLY STARTING SALARIES OF PHYSICS BACHELOR'S DEGREE RECIPIENTS BY TYPE OF EMPLOYER AND SEX, 1986

TYPE OF EMPLOYER	MEN (458 Reported Salaries)		WOMEN (62 Reported Salaries)		TOTAL (520 Reported Salaries)	
	% Distribution by Employer	Median	% Distribution by Employer	Median	% Distribution by Employer	Median
Industry - Mfg.	29	$2,280	33	$2,350	30	$2,300
Industry - Service	18	2,100	15	2,330	18	2,150
High School	6	1,330	13	1,470	7	1,350
College or University	5	1,530	1		4	1,530
Government, Civilian	9	1,860	26	1,790	11	1,840
Government, Military	31	1,580	7		28	1,590
FFRC*	1	2,250	3		1	2,100
Other	1	1,550	2	1,500	1	1,540
Total	**100**	**1,860**	**100**	**2,160**	**100**	**1,900**

* Federally Funded Research Center. NOTE: Blanks indicate insufficient data.

SOURCE: American Institute of Physics, 1984-85 Graduate Student Survey, August 1986.

TABLE 24

MEDIAN MONTHLY STARTING SALARIES OF NEW PHYSICS DEGREE RECIPIENTS BY TYPE OF EMPLOYER & DEGREE LEVEL, 1985

TYPE OF EMPLOYER	TERMINAL MASTER'S RECIPIENTS		DOCTORATE RECIPIENTS				BACHELOR'S DEGREE RECIPIENTS	
			% Accepting		Monthly Salaries For			
	Percentage Accepting Positions	Salary	Post-docs	Potentially Permanent Positions	Post-docs	Potentially Permanent Positions	Percentage Accepting Positions	Salary
Secondary School	2%	$	%	%	$	$	4%	$1,270
College	3	1,850		5		2,000		
University	11	1,580	41	6	1,820	2,400	3*	1,420*
Industry	55	2,560	4	24	3,050	3,375	55	2,190
Government (inc. military)	22	2,200	3	3	2,150	2,550	34	1,550
FFRC**	4	2,300	7	4	2,175	3,550	3	2,200
Other	3	2,250	1	2	2,200	3,180	1	1,610
All Employers	100	2,400	100		1,895	3,120	100	1,990

*Includes both colleges and universities.

**Federally-funded Research Center.

NOTE: Blanks indicate no salaries reported.

SOURCE: American Mathematical Society, NOTICES, Vol. 33, No. 7, November 1986.

TABLE 25

MEDIAN BEGINNING SALARIES IN MATHEMATICS FOR PH.D.'S BY TYPE OF EMPLOYER OR ACTIVITY AND SEX, 1985 AND 1986

TYPE OF EMPLOYER	MEN		WOMEN	
	1985	1986	1985	1986
Teaching or Teaching & Research (9 Months)	$25,000	$26,900	$24,200	$26,800
Teaching or Teaching & Research (12 Months)	24,000	32,000	28,000	28,500
Research (9 Months)	22,600	25,000		24,000
Research (12 Months)	36,000	30,000	30,000	27,000
Business & Industry (12 Months)	40,000	45,300	37,000	37,500
Government (12 Months)	32,500	40,000		

NOTE: Blanks indicate that not enough returns were received to warrant including the figures.

TABLE 26

MEDIAN BEGINNING SALARIES IN MATHEMATICS FOR NEW PH.D.S BY TYPE OF EMPLOYER, 1982-1986

TYPE OF EMPLOYER	1982	1983	1984	1985	1986
Teaching or Teaching & Research (9 Months	$20,600	$21,700	$23,000	$25,000	$26,900
Research (9 Months)	19,000	20,000	20,500	23,500	24,500
Teaching or Teaching & Research (12 Months)	25,000	26,000	26,000	27,300	32,000
Research (12 Months)	24,500	26,200	26,100	34,200	30,000
Business & Industry (12 Months)	35,400	37,500	37,800	40,000	42,500
Government (12 Months)	32,500	32,200	31,500	32,500	40,000

SOURCE: Robert Half of New York, Inc., Prevailing Financial & Data Processing Starting Salaries, 1987

TABLE 27

AVERAGE STARTING SALARY RANGES OF DATA PROCESSING PERSONNEL IN LARGE INSTALLATIONS* BY POSITION, 1986 AND 1987

POSITION	SALARY RANGES		Percent Increase
	1986	1987	
DATA PROCESSING - LARGE INSTALLATIONS			
Vice President, MIS	$65,000-94,000	$70,000-100,000	6.9
MIS Director	55,000-75,500	60,000-80,000	7.3
SYSTEMS & PROGRAMMING			
Manager	38,000-46,000	42,000-50,000	9.5
Project Manager	35,500-45,000	38,000-48,000	6.8
Project Leader	33,500-42,500	35,500-45,000	5.9
Systems Analyst	33,000-41,000	35,000-43,000	5.4
Programmer Analyst	26,000-35,000	27,000-36,000	3.3
Programmer	22,000-28,000	23,000-30,000	6.0
TECHNICAL SERVICES			
Manager	39,000-49,000	42,000-52,000	6.8
Systems Programmer	30,000-40,000	32,000-42,500	6.4
DATA BASE SUPPORT			
Data Base Manager	51,000-62,000	55,000-65,000	6.2
Data Base Administrator	35,000-45,000	38,000-48,000	7.5
Data Base Analyst	31,000-42,000	34,000-44,000	6.8
TELECOMMUNICATIONS			
Manager	36,000-42,000	40,000-50,000	15.4
Telecommunications Specialist	33,000-38,000	34,000-40,000	4.2
OPERATIONS			
Manager	30,000-40,000	33,000-43,000	8.6
Shift Supervisor	24,000-31,000	26,000-33,000	7.3
Operator	17,500-22,500	19,000-24,500	8.8
Input/Output Clerk	16,500-21,000	17,000-21,000	1.3
Data Entry	14,000-18,000	14,500-18,000	1.6
EDP AUDIT			
Manager	35,500-48,000	37,500-50,500	5.4
Senior	30,500-39,000	33,000-41,500	7.2
Staff	24,000-30,000	25,000-32,000	5.6

*Employing over 50 d.p. professionals.

SOURCE: Robert Half of New York, Inc., Prevailing Financial & Data Processing Starting Salaries, 1987

TABLE 28

AVERAGE STARTING SALARY RANGES OF DATA PROCESSING PERSONNEL IN MEDIUM INSTALLATIONS* BY POSITION, 1986 AND 1987

POSITION	SALARY RANGES		Percent Increase
	1985	1986	
DATA PROCESSING			
Vice President, MIS	$53,000-75,000	$56,000-79,000	5.1
MIS Director	45,000-55,000	45,000-58,000	3.0
SYSTEMS & PROGRAMMING			
Manager	35,000-45,000	36,000-46,000	2.5
Project Manager	35,000-40,000	35,000-42,000	2.7
Project Leader	32,000-40,000	32,500-41,500	2.8
Systems Analyst	32,000-38,000	32,500-40,000	3.6
Programmer Analyst	25,000-35,000	25,500-36,000	2.5
Programmer	20,000-27,000	22,000-29,000	8.5
TECHNICAL SERVICES			
Manager	37,000-45,000	38,000-47,000	3.7
Systems Programmer	29,000-40,000	30,000-43,000	5.8
DATA BASE SUPPORT			
Data Base Manager/Administrator	33,000-41,000	35,000-43,000	5.4
Data Base Analyst	29,000-34,500	30,000-35,000	3.1
TELECOMMUNICATIONS			
Manager	31,000-39,000	37,000-45,000	17.1
Telecommunications Specialist	26,000-36,000	28,000-36,000	3.2
OPERATIONS			
Manager	30,000-39,000	31,000-40,000	2.9
Shift Supervisor	23,000-27,000	24,000-28,000	4.0
Operator	17,000-21,000	17,000-22,000	2.6
Input/Output Clerk	15,000-20,500	15,000-20,500	0.0
Data Entry	12,000-15,000	13,000-15,500	5.6
EDP AUDIT			
Manager	34,000-41,000	36,000-43,500	6.0
Senior	27,000-36,000	28,000-37,000	3.2
Staff	25,000-32,000	26,000-34,000	5.3

*Employing between 15 and 49 d.p. professionals.

SOURCE: Robert Half of New York, Inc., Prevailing Financial and Data Processing Starting Salaries, 1987.

TABLE 29

AVERAGE STARTING SALARY RANGES OF DATA PROCESSING PERSONNEL IN SMALL* COMPANIES BY POSITION, 1986 AND 1987

POSITION	SALARY RANGES		Percent Increase
	1986	1987	
SYSTEMS & PROGRAMMING			
Manager	$30,000-$38,500	$32,000-$40,000	5.1
Project Manager	27,000-35,000	28,000-36,000	3.2
Project Leader	26,500-34,500	27,000-35,500	2.5
Systems Analyst	26,000-33,000	26,500-34,000	2.5
Programmer Analyst	23,000-32,000	23,000-33,000	1.8
Programmer	18,500-23,000	18,500-24,000	2.4
OPERATIONS			
Manager	24,000-32,000	25,000-34,000	5.4
Operator	14,000-18,000	15,000-19,000	6.3
Input/Output Clerk	13,500-17,000	13,500-17,000	0.0
Data Entry	12,000-14,000	12,000-15,000	3.8
CONSULTING			
Manager	42,000-60,000	46,000-64,000	7.8
Senior	35,000-44,000	37,000-47,000	6.3
Associate	29,000-36,000	30,000-37,000	3.1
TECHNICAL WRITING			
Manager	34,000-43,000	35,000-44,000	2.6
Software/Hardware Writer	27,000-33,000	27,000-34,000	1.7
Documentation Specialist	22,000-30,000	23,000-31,000	3.8
METHODS ANALYSIS			
Manager	31,000-39,000	33,000-42,000	7.1
Analyst	23,000-30,000	25,000-32,000	7.5
EDP EDUCATION			
Manager	35,000-45,000	37,000-47,000	5.0
Curriculum Developer	29,000-36,000	30,000-37,000	3.1
Instructor	24,000-32,000	25,000-33,000	3.6
SOFTWARE DEVELOPMENT			
Product Manager	44,000-66,000	46,000-69,000	4.5
Software Engineer	35,000-44,000	35,000-45,000	1.3

* Employing less than 15 d.p. professionals.

SOURCE: Battelle Columbus Laboratories, 1986 National Survey of Compensation Paid Scientists and Engineers Engaged in Research and Development Activities, January, 1987.

TABLE 30

NUMBER AND MEAN MONTHLY STARTING SALARIES OF NONSUPERVISORY EMPLOYEES ENGAGED IN R&D ACTIVITIES BY FIELD OF DEGREE AND DEGREE LEVEL, 1986

FIELD OF DEGREE	DEGREE LEVEL								
	Bachelor's			Master's			Doctorate		
	Number	Median	Mean	Number	Median	Mean	Number	Median	Mean
Engineering	1,060	$2,377	$2,344	46	$2,727	$2,737	19	$3,375	$3,321
Chemistry	42	1,650	1,676				15	3,000	2,687
Physics	45	2,300	2,222	3	2,700	2,700	11	3,200	2,927
Life Sciences	18	1,150	1,322				7	1,500	1,643
Math & Statistics	103	2,180	2,159	4	2,550	2,375	2	3,300	3,300
Social Sciences	9	1,437	1,578				5	2,800	2,820

TABLE 31

NUMBER, MEDIAN AND MEAN MONTHLY STARTING SALARIES OF NONSUPERVISORY ENGINEERING BACHELOR'S DEGREE EMPLOYEES ENGAGED IN R&D ACTIVITIES BY WORKING-AS-OCCUPATION, 1986

WORKING-AS-OCCUPATION	Number	Median	Mean
Aeronautical Engineering	96	$2,242	$2,231
Chemical Engineering	36	2,438	2,408
Electrical Engineering	492	2,384	2,362
Materials Engineering	16	2,364	2,375
Mechanical Engineering	114	2,375	2,334
Metallurgical Engineering	6	2,450	2,667
Nuclear Engineering	33	2,353	2,345

SOURCE: U.S. Department of Labor, Occupational Outlook Handbook, 1986-87 Edition.

TABLE 32

STARTING SALARIES OF SCIENTISTS BY FIELD, TYPE OF EMPLOYER AND HIGHEST DEGREE ATTAINED, 1984 AND 1985

OCCUPATION	Estimated Number Employed in 1984	TYPE OF EMPLOYER					
		1984 Private Industry			1985 Federal Government		
		B. S.	M. S.	Ph.D.	B. S.	M. S.	Ph.D.
Engineers	2,214,100[1]	$26,300	$30,400	$39,500	$18,710- 23,170	$25,980	$28,039
Mathematicians[2]	53,000	23,400	28,800	35,600	14,400- 17,800	21,800- 26,400	26,400- 31,600
Statisticians	23,000				14,400- 17,800	21,800- 26,400	26,400- 31,600
Agricultural Scientists[2]	37,000	17,000			14,390 17,824	17,824- 21,804	26,381- 31,619
Biological Scientists[2]	108,000	16,800			14,390- 17,824	17,824- 21,804	26,381- 31,619
Foresters & Conservationists	25,000				14,400	17,800	
Geologists & Geophysicists	46,000	22,800	29,300		14,390- 17,824	17,824- 21,804	26,381- 31,619
Meteorologists	5,500				14,390- 17,824	17,824- 21,804	26,381- 31,619
Chemists	85,000	21,100	26,700	35,500	14,390- 17,824	21,804	26,381- 31,619
Physicists[2]	40,000			38,400	14,390- 17,824	17,824- 21,804	26,381- 31,619
Accountants & Auditors	882,000	19,500	23,200		14,400	17,800- 21,800	
Psychologists	97,000				14,400- 17,800	21,800	26,400- 31,600
Economists	38,000	20,000			14,400	21,800	26,400- 31,600
Social Workers	335,000	15,700†	20,100†			21,804	
Sociologists	5,600				14,400- 17,800	21,800	26,400- 31,600
Computer Programmers	341,000		20,000***			17,940***	
Computer Systems Analysts	308,000		25,480***			17,940***	

***All degree levels.

†Salary in State and Local Governments. [1] Number obtained from National Science Foundation. [2] Includes higher education faculty.

SALARIES OF EXPERIENCED SCIENTIFIC AND TECHNICAL PERSONNEL

Three subsystems comprise the **National Science Foundation's Scientific and Technical Personnel Data System** - the **Survey of Doctorate Recipients,** the **New Entrants Survey** and the **Experienced Sample Survey.**

Surveys of doctoral scientists and engineers are conducted by the **National Research Council** on the basis of a sample of individuals drawn from a roster of doctorate recipients. The roster is compiled from a number of sources, including the **National Academy of Sciences/National Research Council's Doctorate Records File**; the **National Science Foundation's National Register of Scientific and Technical Personnel,** which from 1954 through 1970 collected information on highly qualified scientists; **American Men and Women of Science**; and several other sources including university and college catalogs of doctorate-granting institutions; federal laboratories; and selected industrial organizations. The 1985 population consists of individuals working in the U.S. who earned doctorates at U.S. or foreign universities within the 42-year period 1942-1984. Included in this population are individuals whose doctorates are in the natural or social sciences, mathematics, and engineering, as well as individuals who received research doctorates in non-S/E fields but were known to be employed as scientists or engineers.

The 1985 **Survey of Doctorate Recipients,** the seventh in a biennial series first conducted in 1973, included a sample of approximately 59,300 scientists and engineers. Data from this survey were published by the **National Science Foundation** in **CHARACTERISTICS OF DOCTORAL SCIENTISTS AND ENGINEERS IN THE UNITED STATES: 1985.**

The median annual salary for all doctoral scientists and engineers in 1985 was $44,800, with those employed by business and industry receiving the highest median salary - $52,000. Salaries paid by two-year colleges and by state government were the lowest - $36,100 - 19% below the overall median. Economists working in business and industry recorded the highest median salary in 1985 - $56,300 while life scientists working in elementary and secondary schools earned the least - $25,000 (Table 33). Table 34 presents detailed data on salaries paid to doctoral scientists and engineers employed in business and industry in 1981, 1983 and 1985. During this five-year period, salaries paid to doctoral scientists and engineers increased 29%.

Teaching, the dominant work activity of doctoral scientists and engineers continues to provide the lowest salary. In 1985, the median annual salary of Ph.D.s who reported teaching as their primary work activity was $39,200 - $21,100 (35%) below that of doctoral scientists and engineers who reported the management or administration of R & D as their primary work activity (Table 35).

By geographic area, doctoral scientists and engineers working in the Pacific region continued to earn the highest median salaries - $46,600, while those working in east south central reported the lowest - $40,200. Engineers working in the Pacific region reported the highest salaries - $55,200 - while sociologists/anthropologists working in the east south central area reported the lowest - $32,500 (Table 36). Median annual salaries of doctoral scientists and engineers by years of professional experience and age in 1985 are presented in Tables 37 and 38.

Women doctoral scientists and engineers continue to earn considerably less than their male counterparts regardless of field or experience level. Overall, women earned 23% less than men. By field, women who received their Ph.D. in engineering reported the highest median salary in 1985 - $43,900, while those who received their doctorate in agricultural sciences earned the least - $31,900 (Table 39). With the exception of Asian mathematicians and environmental scientists, white Ph.D.s earned higher salaries than minority Ph.D.s regardless of field (Table 40).

The **New Entrants Survey** provides data on recent bachelor's and master's degree recipients in science and engineering fields who have entered the labor force. The 1986 survey of 1984-85 bachelor's and master's degree graduates finds that women already earn less than their male counterparts one to two years after receipt of their degree. In all science and engineering fields in 1986, women bachelor's degree graduates of 1984-85 had a median annual salary $7,000 (25.9%) below the $27,000 median salary reported by their male counterparts. This differential has been widening. In 1980, women bachelor's degree graduates of 1978-79 reported a median annual salary of $5,400 less than their male counterparts. Although women baccalaureates employed in science and engineering had a higher salary than those employed outside of science and engineering, the gap between men and women was wider for those employed in science and engineering (Table 41). The same salary differential exists for women master's degree recipients as shown in Table 42. As was true for doctoral scientists and engineers, both bachelor's and master's degree scientists and engineers employed in business and industry reported the highest salaries, while those working in educational institutions reported the lowest (Table 43). Overall, both bachelor's and master's degree scientists and engineers working in research and development earned the highest salaries (Table 44). By field of employment, bachelor's and master's degree engineers of both sexes reported the highest salaries (Table 45). 1986 median annual salaries by racial/ethnic group for both bachelor's and master's degree graduates are shown in Table 46.

The **RECENT COLLEGE GRADUATES** surveys, conducted periodically by the **CENTER FOR EDUCATION STATISTICS** Of the **U.S. DEPARTMENT OF EDUCATION,** have concentrated on those graduates entering the teaching profession. The 1985 survey requested data from 18,738 students from 404 colleges. Responses were obtained from 13,200 students for a response rate of 74%. Salary information from the 1985 survey were reported in the **DIGEST OF EDUCATION STATISTICS 1987.** Not surprisingly, by occupational area, engineering bachelor's degree recipients reported the highest average salaries ($25,900) while those in communications reported the lowest ($14,300) (Table 47). By field of study, while engineering graduates again reported the highest salaries, education graduates reported the lowest (Table 48).

COMPENSATION AND BENEFITS IN RESEARCH AND DEVELOPMENT by **Abbott, Langer & Associates** is the first in a new series of surveys covering both salaries and total cash compensation of approximately 5,000 employees employed in research and development. In this first report, 116 organizations in business and industry, education, and other areas participated in providing the data on 15 benchmark jobs. By discipline, physicists reported the highest median salaries for all job positions with the exception of section head as shown in Table 49. Tables 50, 51 and 52 provide salary information by selective metropolitan area, geographic region and selective states.

As expected, the more experienced R/D scientists and engineers reported the higher salaries regardless of job position (Table 53). Table 54 provides salaries of R/D scientists and engineers by level of education. Research and development specialists working in educational institutions reported the lowest median salary ($26,000), while those working in "other non-manufacturing organizations" reported the highest ($49,190) (Table 55). Regardless of job position, those R/D scientists and engineers working in pure research earned the highest salaries (Table 56).

The **1986 NATIONAL SURVEY OF COMPENSATION PAID SCIENTISTS AND ENGINEERS ENGAGED IN RESEARCH AND DEVELOPMENT ACTIVITIES** is the eighteenth annual survey conducted by the **Battelle Columbus Laboratories** for the **U. S. Department of Energy.** The 1986 report presents salary data from 602 establishments contacted employing 80,973 scientists and engineers.

By working-as-occupation, nuclear and reactor engineers reported the highest average monthly salary at the bachelor's level, while electrical and electronic engineers reported the highest salary at both the master's and doctoral level among nonsupervisory scientists and engineers working in research and development in 1986. Agricultural and biological scientists reported the lowest monthly mean salaries at all three degree levels (Tables 57, 58, and 59).

Those scientists and engineers working in contract research centers earned the highest average salaries at all degree levels while those scientists and engineers working in educational institutions earned the least at all degree levels (Table 60).

By highest degree field, physicists at all degree levels reported the highest average salaries working in R & D in 1986 Life scientists earned the lowest salaries at all three degree levels (Table 61).

Women continue to earn substantially less than their male colleagues working in R & D regardless of field or degree level. Although salaries are approximately equal in the first few years after graduation with women earning more at seven years after receipt of the first degree, men's salaries rise faster than women's, so that the salary gap increases over time (Table 62). Salaries of bachelor's degree scientists and engineers working in the field in which they received their degree are compared to those bachelor's degree scientists and engineers working in a field other than the one in which they received their degree in Table 63. Among professional degreed individuals working in R & D in 1986, those having a doctor's degree in veterinary medicine earned the highest salaries (Table 64).

Another survey of nearly 3,500 scientists and engineers working in research and development by **RESEARCH AND DEVELOPMENT** Magazine finds that the median salary of R & D professionals in 1987 was $43,224, up 4.3% from the $41,449 reported in 1986. The highest salary increase was reported by geologists (11.1%), while metallurgists reported a drop in median salary of 5.2%. Aeronautical engineers reported the highest median salary of scientists and engineers employed in research and development in 1987, up 4.4% from the previous year, while biologists reported the lowest salary (Table 65).

The research and development scientist or engineer with a doctoral degree can expect a career income advantage of $1,703,000 over his R & D colleague who did not go beyond the baccalaureate level. As shown in Table 66, Ph.D. scientists and engineers earn 21.4% more than their colleagues with only a baccalaureate.

It is not surprising that the median annual salary for all males employed in research and development is $44,061 compared to the median for all women workers in R & D of $32,736. But there are bright spots in the data for women in R & D. The 1987 study shows that women reported higher overall salary increases than men. Salaries of men and women employed in research and development by type of employer are shown in Table 67.

Average salaries for 26 professional, administrative, technical, and clerical occupations spanning 112 work level categories in approximately 155,700 establishments employing about 33.5 million workers are reported in the 27th annual **NATIONAL SURVEY OF PROFESSIONAL, ADMINISTRATIVE, TECHNICAL AND CLERICAL PAY** conducted by the **Bureau of Labor Statistics** of the **U.S. Department of Labor.** March 1986 average salaries for eight levels of engineers, the largest profesional group studied, ranged from $27,875 a year for college graduates in trainee positions to $70,008 for those responsible for highly complex engineering programs. Chemists' salaries ranged from $22,426 in level I to $75,110 in level VII. Level IV engineers the largest group studied and representing fully experienced employees, averaged $42,724. Computer programmers (level I) averaged $21,017, while systems analysts I averaged $29,178 (Table 68).

The **NATIONAL SURVEY OF PROFESSIONAL, ADMINISTRATIVE, TECHNICAL AND CLERICAL PAY** for 1987 was limited to the service industries and thus its results cannot be compared with those from previous years. Table 69 presents data from the March 1987 survey by job category and work level.

The annual survey of salaries and employment of its members by the **American Chemical Society** for 1987 is divided into four detailed reports. In **1987 SALARIES OF NON-ACADEMIC CHEMISTS** median annual salaries for chemists were only slightly higher in 1987 than in 1986. Salaries were up 1.5% for bachelor's degree chemists, 2.9% for those at the master's level, and down somewhat at the doctoral level. However, as reported in **1987 SALARIES OF NON-ACADEMIC CHEMICAL ENGINEERS** chemical engineers responding to the survey reported increases in salaries of 7.3% at the bachelor's level, 6.3% at the master's level, but only 2.7% at the doctoral level (Table 70). Chemists in 1987 appear to be worse off than they were a year ago if salaries are compared with living costs. Although consumer prices in March 1987 were only 3% higher than a year earlier, median salaries, in constant dollars for B.S. chemists are 1% lower and those for Ph.D.s are down 3% from March 1986. In 1987 for the first time since 1980, the median salary for Ph.D.s has not outpaced the rise in living costs. Median salaries for baccalaureate chemists have been down more often than not during the past 10 years after adjusting for inflation. The overall median for B.S. chemists in 1987 is 15% lower than it was 10 years ago (Charts 1 and 2).

Experience is a key factor affecting salaries. This is especially true during the first 20 to 25 years after undergraduate training. For example, the median salary for male chemists whose highest degree is a B.S. and who earned that degree 20 to 24 years ago is 83% higher than that for chemists who obtained their degree two to four years ago. For female chemsits, the comparable figure is 58.9%. Similar differences are evident at the other degree levels (Table 71).

In general, salaries are lower for women than men regardless of where they work. In part, this is because women are less likely than men to hold positions of high responsibility and authority. However, even when allowance is made for their younger-than-average age, women are underrepresented in jobs where salaries are typically the highest. As shown in Table 72 women chemists at all degree levels employed in private industry earn only 87% as much as their male colleagues. The salary gap in academe and government is somewhat greater. This salary discrepancy between men and women is true regardless of experience level or degree level (Table 71).

On average, chemists working in the petroleum and natural gas industry receive higher salaries than their counterparts in other industries (Table 73). Managers in industry earn more than chemists involved with research and development or in production and quality control or any other activity (Table 74).

In industry, polymer chemists are at the top of the salary scale at the B.S. level and inorganic chemists at the master's level. Biochemists earn the least at both the bachelor's and master's level. However, at the Ph.D. level, general chemists reported the highest salaries, while inorganic chemists earned the least (Table 76).

Salaries of chemists also differ by geographic region. The median salary of bachelor's level chemists ranged from a high of $37,000 in the Pacific region to a low of $30,000 in the West North Central region, while median salaries for Ph.D.s were again highest in the Pacific region, but lowest in the East South Central region (Table 76). Salaries of non-academic chemists by selected states and metropolitan areas are shown in Tables 77 and 78.

The seventh annual salary survey conducted by **INDUSTRIAL CHEMICAL NEWS** of some 1,200 chemists, found that salary increases in 1986 ranged between 6 and 10 percent. However 15% of the respondents reported no pay raise in 1986, including 45% of government workers and 28% of those working in the West South Central region. Although only 0.9% of the survey's respondents are self-employed, their salaries are impressive, averaging $63,591. The bulk of the respondents worked in manufacturing, but earned one-third less than those who were self-employed (Table 79). Analytical chemistry is the most common specialty among the respondents. But such chemists are near the bottom of the salary heap, averaging only $38,173 a year. Physical chemists, while only 4% of the respondents, reported the highest salary - $48,857 (Table 80).

The number of people supervised appears to be one of the most accurate predictors of salaries. Salaries climb rapidly with the added responsibility of mangaging other workers. Respondents who do not supervise anyone average only $35,566 a year while those who supervise from six to 20 average $49,302 (Table 81). Those who do administrative work make an average of $50,459, which is $17,000 more than those who perform quality control tasks (Table 82). Salaries varied only slightly around the country. The highest average salary, $43,602, was found in the Pacific region, while the lowest was reported by chemists in the East South Central region - $40,764 (Table 83).

The fifth biennial demographic survey of members of the **American Institute of Chemists** found an overall median salary of $46,000 in 1986, up only 2.2% from the 1984 survey, but up nearly 51% since the first survey was conducted in 1978. Bachelor's reported the largest increase of 9.1% with a 1986 median of $36,000. Those with masters degrees received an increase of 4.1%, but Ph.D.s reported an increase of only 2.0% to $50,000 in 1986. Again, the AIC survey found males were better paid in 1986 than females. Median salaries for bachelors, for example, found males reporting $39,000, and females $28,000 - a 39.2% differential. The salary gap was evident also at the other degree levels (Table 84). One hopeful sign is that these differences are less than they were two years ago.

Chemists earned the most working in industry regardless of degree level, and the least in academia at both the bachelor's and master's level. However, Ph.D.s who were self-employed reported the lowest salary (Table 85). Not unexpectedly, industry was the largest employer of AIC chemists, accounting for 46.1% of them.

The largest group of respondents were analytical chemists, 20.8%, but they reported salaries 10-20 percent below the overall medians for the three degree groups. The least well paid chemical specialists are biochemists, whose salaries ranged from $28,000 for bachelor's to $34,000 for master's and $50,000 for Ph.D.s. Polymer chemists were the highest paid of the chemical specialists (Table 86). As usual, AIC found that chemists in management are paid the most, regardless of degree level, while those in teaching are paid the least (Table 87).

Median annual salaries are highest for bachelor's and master's level AIC members working in the Pacific region, but Ph.D.s working in the Middle Atlantic area reported the highest salaries (Table 88).

The 30th annual salary survey conducted by the **AMERICAN MATHEMATICAL SOCIETY** found that women were earning the same as men after one year of experience in teaching and/or research based on a 9-month period, but were earning less in all other employer categories (Table 89).

A **North American Survey of Geoscientists** by the **American Geological Institute** in 1986 found approxmately 120,000 geoscientists in the U.S. These geoscientists reported the highest median annual salaries - $63,000 - working for independent petroleum companies or working in banking, law or journalism. Those working in the minerals industry reported the lowest - $35,000 (Table 90).

The 1985 salary survey conducted by the **AMERICAN PSYCHOLOGICAL ASSOCIATION** presents data on more than 10,000 APA members. Doctoral psychologists, not including those employed in faculty positions, working in administration of human services and in applied psychology reported the highest median salary - $52,000, while those working in direct human services (school psychology) reported the lowest - $30,000. At the master's level, psychologists working in other administrative positions reported the highest salaries - $47,500 - while those working in school psychology reported the lowest - $27,818 (Table 91). Further breakouts by years of work experience and type of position for doctoral and master's level psychologists are shown in Tables 92 and 93 respectively.

The average salary of members of the **AMERICAN INSTITUTE OF PHYSICS** member societies in 1985 was $48,100, according to data collected, but unpublished, by the AIP. Physicists employed in industry commanded the highest salaries regardless of degree or experience level, while those employed in education earned the least (Tables 94 and 95). Industrial physicists working in basic research at the beginning of their careers earned less than those working in other areas, but as they progressed in their careers, their salaries outpaced those of physicists working in all other areas, except administration (Table 96). Salaries of physicists by years since the Ph.D. are shown in Table 97.

By geographic region, those Ph.D.s employed in the Pacific region reported the highest median annual salary - $49,900. In contrast, doctoral physicists working in the West North Central Division reported the lowest salaries - $40,000 (Table 98). Although Ph.D. physicists working in academe earned the most in the Pacific region, those working in industry earned the most in the Mountain region, while those working in government earned the most in the South Atlantic region (Table 99). Salaries of Ph.D. physicists in selected states is shown in Table 100.

Women comprise only a small proportion of the industrial physics workforce and earn less than their male colleagues regardless of years of experience as shown in Table 101.

Salaries vary widely among information systems and data processing personnel, according to the fourth annual survey of 715 organizations reported in **COMPENSATION IN THE MIS/DP FIELD** by **Abbott, Langer & Associates**, and sponsored by Computer Decisions Magazine. Salaries ranged from a high of $54,000 for top Management Information Systems (MIS/IS) officers to a low of $13,208 for junior key entry operators.

Average and median salary and total compensation are reported for 44 MIS/dp jobs is Table 102.

A number of factors affect salaries paid to information systems and data processing personnel. Generally, industrial employers pay the highest salaries. However, some jobs pay better in manufacturing organizations, while others pay better in non-manufacturing, (Table 103). Other factors influencing salary are level of education (Table 104), length of experience (Table 105) and geographical area (106). In general, more education, more experience, and being employed in the Northeastern or Pacific states increases salary levels. In almost all job titles, women are paid less than their male counterparts as shown in Table 107.

Data processing salaries increased just under 3% in 1987, nearly triple the increase reported in 1986, but still well below historic patterns, according to the findings of **INFOSYSTEMS'** 29th annual salary survey. The survey reports on information provided on 7,692 jobs from 595 firms. Increases ranged from 2% for a data entry supervisor to 19.6% for a project/team leader. Average salaries ranged from a high of $1,131 per week to a low of $428 for an end user computer specialist/office automation specialist (Table 108). Salaries for 1986 for these and other job positions are shown in Table 109.

Geographic location had an influence on salary levels. Generally, salaries for data processing personnel were lowest in the West North Central states (Minnesota, North Dakota, South Dakota, Nebraska and Iowa) and highest on the east and west coasts (Table 110). 1986 salaries for additional job categories are shown in Table 111.

Public utilities and insurance firms generally paid the highest average salaries, regardless of job position in 1987 (Table 112). In 1986, of those industries selected, the chemicals, petroleum and coal industries generally paid the most (Table 113).

The **ASSOCIATION OF DATA PROCESSING SERVICES ORGANIZATION (ADAPSO)** and **Mercer-Meidinger-HANSEN, Inc.** report salaries of selected data processing personnel in their **ADAPSO COMPENSATION SURVEY RESULTS 1987**. Salaries vary by level of responsibility and geographic area. For example, lead operating systems/software programmer/analysts earned the highest salaries in the Northeast area and the lowest in the midwest (Table 114). California/Hawaii paid the most to senior applications programmer/analysts (Table 115), software development programmer analysts (Table 116), technical writers (Table 117), and customer service representatives (118). However, customer support (tech) representatives earned the most in the southwest (Table 119). Table 120 presents median salaries for data processing personnel by geographic area.

In its fifth annual **1987 DATA PROCESSING SALARIES REPORT** The **ADMINISTRATIVE MANAGEMENT SOCIETY** reports that salaries for data processing managers rose 4.4% in 1986 from the previous year, while increases for professional/supervisory employees rose 3.6% and staff positions went up only 1.8%. Average salaries for the 20 EDP positions covered in the survey are reported in Table 121.

Salaries increased about 6% in 1986 from the previous year, according to the annual salary survey by **DATAMATION**. As shown in other surveys of data processing personnel, where one works has an effect on salary. Those dp personnel employed in education earn considerably less than the overall average, in some cases earning less than half as much as their highest paid colleagues working in other areas. For example, vice presidents of dp/MIS on corporate staffs in the transportation or utilities industries averaged $73,267; the same level in the education field got $48,627; and the overall average was $58,466 (Table 122).

Economic conditions vary throughout the country, resulting in wide variation in salaries paid to dp personnel with the same job title as shown in Table 123.

Salary levels for computer professionals continued to increase across the board during 1987, according to the **1987 COMPUTER SALARY SURVEY AND CAREER PLANNING GUIDE** by **SOURCE EDP.** The 1987 survey is based on an analysis of thousands of computer professionals assisted by SOURCE EDP during 1987. Salaries for non-management positions usually depend upon length of professional experience as shown in Table 124. Salaries for management positions will often depend upon the size of computer system installed or upon the size of staff managed. Management computer professionals earn the highest salaries working in large computer system firms and the lowest working in small computer system firms. The highest compensation was reported for computing system directors working in large computer systems - $66,000 (Table 125).

The **1986 EDP COMPENSATION COMPARISON** by **the Hay Group** is the ninth annual study of compensation for selected jobs in electronic data processing and provides information on over 18,500 incumbents from a total of 274 organizations representing a wide variety of industrial, financial and service businesses. Data processing salaries increased an average 5% from 1985 to 1986, ranging from a low of $22,800 for entry-level degreed professionals working in the New England area to a high of $76,800 for senior managers working in the metropolitan New York area (Table 126). By type of industry, entry level personnel reported the highest salaries working in the utilities/transportion industry, while managers reported the highest working in the petroleum/gas industry (Table 127).

The sixteenth and last annual edition of **POSITION CLASSIFICATION AND PAY IN STATE AND TERRITORIAL PUBLIC HEALTH LABORATORIES** by the **U. S. Department of Health and Human Resources, Public Health Services** presents average annual salaries for selected technical positions. The 1985 survey finds Alaska again leads all states in salaries paid to laboratory technicians, microbiologists and laboratory directors (Table 128). Average salaries in 1985 ranged from a low of $11,081 for entering lab aides to a high of $42,133 for lab directors (Table 129).

The seventh annual edition of **COMPENSATION IN THE ACCOUNTING/FINANCIAL FIELD** by **Abbott, Langer & Associates** found that while banks and other financial organizations paid the highest median annual salaries to chief financial officers ($77,632), they also paid the lowest to accountants and auditors ($19,054) (Table 130). Chief financial officers earned the highest in the North Central states while accountants earned the highest in the midwestern states (Table 131). Salaries for accounting/financial personnel by level of education is shown in Table 132.

Median weekly earnings of managerial and professional workers rose 3.65% between the fourth quarter of 1985 and the fourth quarter of 1986, according to data from the **U.S. DEPARTMENT OF LABOR, BUREAU OF LABOR STATISTICS.** For men, executives, administrators and managerial personnel earned the highest salaries. For women, professional specialists earned more than the executive and managerial group. However, regardlesss of occupation - from managerial and professional to technical, sales and administrative support - women reported lower median weekly earnings than did men in similar positions (Table 133).

The weekly earnings of full-time wage and salary workers in 230 occupations for 1986 is collected and reported by the Bureau of Labor Statistics. Table 134 reports salaries for workers in science, engineering and related fields by sex.

SOURCE: National Science Foundation, Characteristics of Doctoral Scientists and Engineers in the U.S., 1985.

TABLE 33

MEDIAN ANNUAL SALARIES OF DOCTORAL SCIENTISTS AND ENGINEERS BY FIELD AND TYPE OF EMPLOYER, 1985

FIELD	TOTAL	TYPE OF EMPLOYER								
		Business & Industry	EDUCATIONAL INSTITUTIONS				Hospital/ Clinic	Non-Profit Organization	Federal Government	State Government
			Total	4-Year Colleges	2-Year Colleges	Elem./Sec. School				
ALL FIELDS	**$44,800**	**$52,000**	**$40,600**	**$40,800**	**$36,100**	**$36,300**	**$37,800**	**$43,900**	**$48,400**	**$36,100**
PHYSICAL SCIENTISTS	**47,000**	**51,100**	**41,000**	**41,700**	**37,000**	**32,500**	**46,000**	**45,600**	**49,600**	**35,600**
Chemists	46,000	50,800	39,400	39,700	37,500	33,000	42,900	45,000	47,400	
Physicists/Astronomers	48,400	53,800	45,100	45,700	34,800			46,900	51,100	
MATHEMATICAL SCIENTISTS	**42,100**	**50,200**	**40,300**	**40,600**	**36,200**	**32,000**		**36,800**	**48,100**	
Mathematicians	41,800	51,200	40,200	40,600	36,200	32,000			48,300	
Statisticians	43,700	43,900	42,200	42,200					47,100	
COMPUTER/INFO. SPECIALISTS	**46,000**	**48,700**	**43,600**	**44,000**				**47,300**	**50,500**	
ENVIRONMENTAL SCIENTISTS	**46,600**	**54,400**	**40,900**	**40,900**				**46,200**	**50,000**	**38,000**
Earth Scientists	47,500	54,900	41,100	41,200				46,800	50,200	38,000
Oceanographers	42,300	40,600	39,600	39,700					50,300	
Atmospheric Scientists	47,300	52,900	45,500	45,500					47,600	
ENGINEERS	**52,400**	**55,200**	**48,600**	**48,600**				**55,900**		
LIFE SCIENTISTS	**41,700**	**49,200**	**39,900**	**40,000**	**36,400**	**28,200**	**41,500**	**40,400**	**46,600**	**40,800**
Biological Scientists	40,500	47,300	38,500	38,800	34,800	25,000	39,000	37,600	45,600	40,100
Agricultural Scientists	41,200	44,100	39,500	39,400				45,500	48,200	36,400
Medical Scientists	45,900	56,100	43,200	43,500		36,000	42,500	40,800	48,700	43,700
PSYCHOLOGISTS	**39,500**	**50,500**	**37,600**	**37,400**	**36,600**	**40,200**	**35,900**	**32,400**	**44,100**	**32,900**
SOCIAL SCIENTISTS	**40,500**	**50,600**	**38,600**	**39,000**	**33,700**	**31,500**		**38,400**	**48,200**	**36,400**
Economists	46,100	56,300	42,500	42,500				64,000	52,100	
Sociologists/Anthropologists	37,200	45,000	37,000	37,400	34,600			26,600		
Other Social Scientists	38,300	45,800	36,900	37,100	33,400			38,000	46,100	36,700

NOTE: Median salaries computed only for full-time employed civilians. Blanks indicate no median was computed for groups with fewer than 20 individuals reporting salary.

SOURCE: National Science Foundation, Characteristics of Doctoral Scientists and Engineers in the United States, 1985

TABLE 34

NUMBER AND MEDIAN ANNUAL SALARIES OF DOCTORAL SCIENTISTS AND ENGINEERS EMPLOYED IN BUSINESS AND INDUSTRY BY FIELD, 1981-85

FIELD	1981				1983				1985			
	Number	%	Percent of total employed	Median annual salary	Number	%	Percent of total employed	Median annual salary	Number	%	Percent of total employed	Median annual salary
ALL FIELDS	**99,126**	**10.0**	**28.8**	**$40,300**	**113,463**	**100.0**	30.7	**$47,000**	125,767	**100.0**	31.4	**$52,000**
PHYSICAL SCIENTISTS	**27,409**	**27.7**	**43.4**	**39,900**	**28,748**	**25.3**	**44.9**	**45,900**	**30,281**	**24.1**	**44.9**	**51,100**
Chemists	22,260	22.5	53.1	39,900	22,525	19.9	54.5	45,600	24,067	19.1	55.0	50,800
Physicists/Astronomers	5,149	5.2	24.3	39,900	6,223	5.5	27.4	48,300	6,214	4.9	26.2	53,800
MATHEMATICAL SCIENTISTS	**1,616**	**1.6**	**10.4**	**37,000**	**2,027**	**1.8**	**12.4**	**42,700**	**1,911**	**1.5**	**11.4**	**50,200**
Mathematicians	1,154	1.2	8.9	36,700	1,512	1.3	11.1	43,600	1,393	1.1	10.1	51,200
Statisticians	462	0.5	18.2	37,700	515	0.5	18.5	40,000	518	0.4	18.5	43,900
COMPUTER/INFO. SPECIALISTS	**5,228**	**5.3**	**57.7**	**36,300**	**6,819**	**6.0**	**56.1**	**42,700**	**8,351**	**6.6**	**55.8**	**48,700**
ENVIRONMENTAL SCIENTISTS	**4,705**	**4.7**	**29.6**	**40,700**	**5,154**	**4.5**	**31.3**	**48,500**	**5,254**	**4.2**	**30.4**	**54,400**
Earth Scientists	4,130	4.2	34.4	42,400	4,596	4.1	36.7	49,200	4,769	3.8	36.1	54,900
Oceanographers	184	0.2	10.3		217	0.2	12.5		162	0.1	8.3	40,600
Atmospheric Scientists	391	0.4	18.4	38,100	341	0.3	15.5	48,600	323	0.3	15.2	52,900
ENGINEERS	**31,788**	**32.1**	**55.7**	**41,300**	**34,500**	**30.4**	**56.1**	**49,900**	**37,858**	**30.1**	**57.5**	**55,200**
LIFE SCIENTISTS	**13,123**	**13.2**	**15.5**	**39,300**	**16,444**	**14.5**	**17.7**	**43,700**	**19,165**	**15.2**	**18.8**	**49,200**
Biological Scientists	5,302	5.3	10.7	36,600	7,730	6.8	14.0	41,800	9,337	7.4	15.6	47,300
Agricultural Scientists	3,097	3.1	22.9	35,500	3,583	3.2	24.6	40,100	4,004	3.2	25.8	44,100
Medical Scientists	4,724	4.8	21.7	45,700	5,131	4.5	22.2	50,700	5,824	4.6	22.0	56,100
PSYCHOLOGISTS	**10,122**	**10.2**	**23.6**	**40,300**	**13,020**	**11.5**	**27.9**	**48,000**	**15,530**	**12.3**	**29.8**	**50,500**
SOCIAL SCIENTISTS	**5,135**	**5.2**	**9.2**	**40,000**	**6,751**	5.9	**11.4**	**45,400**	**7,417**	**5.9**	**11.6**	**50,600**
Economists	2,573	2.6	16.1	44,000	2,779	2.4	16.4	52,100	3,043	2.4	17.0	56,300
Soc./Anthropologists	478	0.5	4.3	28,300	801	0.7	6.6	36,300	1,069	0.8	8.4	45,000
Other Social Scientists	2,084	2.1	7.3	35,400	3,171	2.8	10.5	35,600	3,305	2.6	9.9	45,800

NOTE: Percents may not add to 100 because of rounding. Median salaries computed for full-time civilians only. No median was computed for groups with fewer than 20 individuals reporting salary.

SOURCE: National Science Foundation, Characteristics of Doctoral Scientists and Engineers in the U.S., 1985

TABLE 35

MEDIAN ANNUAL SALARIES OF DOCTORAL SCIENTISTS AND ENGINEERS BY FIELD AND PRIMARY WORK ACTIVITY, 1985

FIELD	Total	RESEARCH & DEVELOPMENT				MANAGEMENT OR ADMIN.			Teaching	Consult-ing	Sales Prof. Serv.	Other
		Total	Basic Research	Applied Research	Devel-opment	Total	of R&D	Other than R&D				
ALL FIELDS	**$44,800**	**$45,400**	**$42,400**	**$46,000**	**$48,300**	**$55,700**	**$60,300**	**$50,900**	**$39,200**	**$50,600**	**$42,500**	**$45,200**
PHYSICAL SCIENTIST	**47,000**	**46,600**	**45,800**	**47,100**	**48,200**	**60,300**	**60,600**	**56,500**	**39,000**	**58,300**	**50,200**	**48,900**
Chemist	46,000	45,800	45,500	46,600	46,200	60,000	60,500	55,100	37,600	58,200	48,900	48,500
Physicists/Astronomer	48,400	48,100	47,500	47,700	50,000	60,700	60,800	60,300	39,700		52,900	54,300
MATH. SCIENTIST	**42,100**	**45,000**	**45,000**	**46,000**	**40,300**	**50,200**	**58,300**	**49,300**	**38,900**	**45,900**	**50,600**	**50,300**
Mathematician	41,800	45,100	44,600	48,200	40,600	49,900	58,000	49,000	38,600			47,800
Statistician	43,700	44,800	47,400	45,600					39,300	42,400		
COMPUTER/INFO. SPEC	**46,000**	**46,200**	**48,400**	**46,700**	**45,800**	**56,500**	**59,500**	**50,600**	**42,100**	**50,300**	**40,800**	**40,600**
ENVIRON. SCIENTIST	**46,600**	**45,700**	**44,400**	**50,000**	**42,000**	**56,300**	**57,000**	**55,800**	**39,400**	**51,500**	**52,600**	**44,300**
Earth Scientist	47,500	48,500	45,500	50,500	42,800	57,000	55,800	57,700	39,400	51,300	54,100	44,600
Oceanographer	42,300	42,100	40,800			50,300	56,700		35,900			
Atmospheric Scientist	47,300	40,600	41,100	39,800		59,000	57,800		46,800			
ENGINEER	**52,400**	**50,300**	**46,400**	**50,500**	**50,600**	**62,800**	**62,300**	**65,200**	**47,100**	**55,800**	**56,600**	**51,400**
LIFE SCIENTIST	**41,700**	**40,500**	**40,300**	**40,700**	**41,400**	**52,600**	**57,700**	**50,200**	**37,400**	**45,500**	**50,200**	**41,600**
Biological Scientist	40,500	40,300	40,100	40,700	40,500	52,500	57,900	49,400	36,500	48,300	39,800	40,900
Agricultural Scientist	41,200	40,000	40,100	39,500	45,100	52,500	55,100	51,500	39,500	40,300	38,200	38,200
Medical Scientist	45,900	42,500	42,100	43,800	42,300	52,900	61,100	50,300	40,000	50,100	57,500	45,800
PSYCHOLOGIST	**39,500**	**39,700**	**39,800**	**38,300**	**43,200**	**44,100**	**50,800**	**43,300**	**36,700**	**44,100**	**39,400**	**42,600**
SOCIAL SCIENTIST	**40,500**	**42,500**	**39,700**	**45,100**	**35,100**	**48,900**	**51,400**	**47,800**	**36,800**	**48,800**	**45,900**	**41,400**
Economist	46,100	47,100	46,100	48,000		57,800	55,700	57,900	40,700	61,500	65,200	49,900
Soc./Anthropologist	37,200	40,100	37,900	41,300		40,700		40,500	35,900			36,800
Other Social Scientist	38,300	38,300	34,900	42,000		45,800	50,400	45,200	36,200	40,300	45,000	40,100

NOTE: All median salaries were computed only for full-time employed civilians. No median was computed for groups with fewer than 20 individuals reporting salary.

SOURCE: National Science Foundation, Characteristics of Doctoral Scientists and Engineers in the U.S., 1985

TABLE 36

MEDIAN ANNUAL SALARIES OF DOCTORAL SCIENTISTS AND ENGINEERS BY FIELD AND GEOGRAPHIC AREA, 1985

FIELD	Total	GEOGRAPHIC AREA								
		New England	Middle Atlantic	E. North Central	W. North Central	South Atlantic	E. South Central	W. South Central	Moun- tain	Pacific
ALL FIELDS	**$44,800**	**$44,300**	**$46,500**	**$43,200**	**$40,400**	**$45,600**	**$40,200**	**$43,400**	**$43,900**	**$46,600**
PHYSICAL SCIENTISTS	**47,000**	**48,900**	**49,100**	**45,100**	**40,100**	**48,500**	**41,300**	**44,800**	**47,200**	**50,500**
Chemists	46,000	48,300	50,100	45,300	39,600	46,800	40,700	45,100	42,600	48,700
Physicists/Astronomers	48,400	50,400	46,800	43,700	42,400	51,000	42,000	42,800	49,300	52,600
MATHEMATICAL SCIENTISTS	**42,100**	**42,500**	**46,700**	**40,600**	**36,400**	**44,000**	**37,200**	**38,600**	**39,900**	**42,800**
Mathematicians	42,500	42,400	46,400	40,400	35,800	42,100	36,600	39,900	44,500	42,500
Statisticians	43,700		50,000	43,300		45,200		35,700	35,500	46,400
COMPUTER/INFO. SPEC.	**46,000**	**45,700**	**50,200**	**45,300**	**42,100**	**46,600**	**36,700**	**44,100**	**45,800**	**47,600**
ENVIRONMNTAL SCIENTISTS	**46,600**	**40,800**	**45,700**	**40,700**	**40,500**	**49,800**	**38,700**	**52,400**	**45,700**	**46,900**
Earth Scientists	47,500	38,700	45,700	40,800	41,700	50,100	37,700	53,900	47,600	47,600
Oceanographers	42,300	45,500	39,500			44,200		35,900		42,400
Atmospheric Scientists	47,300					54,600			40,100	51,500
ENGINEERS	**52,400**	**50,500**	**54,000**	**50,900**	**51,000**	**52,900**	**48,800**	**53,800**	**52,100**	**55,200**
LIFE SCIENTISTS	**41,700**	**40,900**	**43,100**	**42,600**	**41,200**	**42,900**	**39,100**	**40,400**	**38,800**	**42,000**
Biological Scientists	40,500	38,400	40,900	42,300	40,900	41,400	37,200	38,500	36,100	41,500
Agricultural Scientists	41,200	47,100	42,300	41,900	39,700	43,700	40,400	39,800	40,700	40,200
Medical Scientists	45,900	49,900	50,200	44,300	46,600	48,600	49,900	46,300	43,100	44,300
PSYCHOLOGISTS	**39,500**	**36,400**	**40,900**	**37,900**	**38,500**	**39,600**	**36,800**	**38,100**	**39,100**	**40,800**
SOCIAL SCIENTISTS	**40,500**	**36,800**	**41,100**	**38,900**	**36,200**	**44,600**	**38,800**	**36,600**	**40,300**	**43,400**
Economists	46,100	38,600	48,200	44,800	40,800	52,200	40,200	44,400	43,300	50,000
Soc./Anthropologists	37,200	34,300	37,200	38,200	33,000	37,200	32,500	34,200	42,000	40,100
Other Social Scientists	38,300	36,900	38,800	36,500	35,400	42,500	39,200	35,100	37,700	42,800

NOTE: All median salaries were computed only for full-time employed civilians.
No median was computed for groups with fewer than 20 individuals reporting salary.

SOURCE: National Science Foundation, Characteristics of Doctoral Scientists and Engineers in the United States, 1985

TABLE 37

MEDIAN ANNUAL SALARIES OF DOCTORAL SCIENTISTS AND ENGINEERS BY FIELD AND YEARS OF PROFESSIONAL EXPERIENCE, 1985

FIELD	Total	YEARS OF PROFESSIONAL EXPERIENCE										
		1 or Less	2-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 or More	No Report
ALL FIELDS	**$44,800**	**$30,400**	**$34,200**	**$38,400**	**$44,800**	**$49,100**	**$51,300**	**$54,400**	**$58,800**	**$60,100**	**$61,200**	**$45,500**
PHYSICAL SCIENTIST	**47,000**	**36,800**	**37,300**	**42,000**	**46,000**	**48,900**	**51,100**	**55,200**	**59,200**	**60,400**	**70,000**	**50,100**
Chemist	46,000	36,800	37,200	41,800	45,400	48,300	50,000	52,300	56,800	60,600		50,100
Physicist/Astronomer	48,400	36,900	38,100	42,300	47,400	50,300	54,700	57,200	61,100	59,500		50,300
MATHEMATICAL SCIENTIST	**42,100**	**39,400**	**31,000**	**34,500**	**39,400**	**45,500**	**48,700**	**53,600**	**54,700**	**59,100**		**42,200**
Mathematician	41,800	39,700	30,500	33,900	37,800	44,900	47,900	55,000	54,400	55,800		42,500
Statistician	43,700		33,200	36,500	45,100	50,400	52,100					40,000
COMPUTER/INFO. SPECIALIST	**46,000**	**30,800**	**42,900**	**43,300**	**46,900**	**49,300**	**50,100**	**70,300**	**57,400**			**48,500**
ENVIRONMENTAL SCIENTIST	**46,600**	**29,200**	**32,000**	**40,900**	**47,300**	**51,100**	**54,900**	**60,600**	**58,100**	**61,700**		**48,200**
Earth Scientist	47,500	29,100	33,900	43,100	48,200	50,900	53,300	61,000	66,100	66,100		47,600
Oceanographer	42,300		29,000	36,000	44,200	50,100						44,800
Atmospheric Scientist	47,300		33,000	38,000	47,500	56,200						55,600
ENGINEER	**52,400**	**39,700**	**41,200**	**48,100**	**52,500**	**57,700**	**60,400**	**60,000**	**67,100**	**61,700**		**54,300**
LIFE SCIENTIST	**41,700**	**27,500**	**30,700**	**35,000**	**41,000**	**47,000**	**50,200**	**52,600**	**57,000**	**57,000**	**56,100**	**43,000**
Biological Scientist	40,500	27,500	29,000	33,500	40,100	45,400	49,200	50,900	55,400	55,400	53,700	40,900
Agricultural Scientist	41,200	27,100	30,600	34,500	40,700	45,600	48,500	48,700	55,900	55,000		44,000
Medical Scientist	45,900	28,900	33,800	39,500	46,300	51,600	60,000	64,000	67,000	68,900		48,700
PSYCHOLOGIST	**39,500**	**26,400**	**30,200**	**35,500**	**39,200**	**42,700**	**46,800**	**50,600**	**53,000**	**55,900**		**40,100**
SOCIAL SCIENTIST	**40,500**	**27,400**	**30,800**	**34,900**	**40,600**	**47,000**	**46,900**	**50,600**	**55,900**	**58,500**		**41,200**
Economist	46,100		34,300	39,600	47,500	53,000	52,500	50,800	54,500			45,600
Sociologist/Anthropologist	37,200		26,500	31,200	37,700	41,800	44,500	48,800	55,500			38,500
Other Social Scientist	38,300	26,400	30,300	34,400	38,700	46,400	45,300	50,600	57,200	52,200		40,300

NOTE: All median salaries were computed only for full-time employed civilians. No median was computed for groups with fewer than 20 individuals reporting salary.

SOURCE: National Science Foundation, Characteristics of Doctoral Scientists and Engineers in the United States, 1985

TABLE 38

MEDIAN ANNUAL SALARIES OF DOCTORAL SCIENTISTS AND ENGINEERS BY FIELD AND AGE, 1985

FIELD	Total	AGE									
		Under 30	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70+
ALL FIELDS	**$44,800**	**$34,800**	**$35,800**	**$39,200**	**$45,100**	**$48,400**	**$50,200**	**$51,400**	**$51,900**	**$52,200**	**$50,500**
PHYSICAL SCIENTIST	**47,000**	**38,000**	**39,100**	**43,000**	**48,500**	**49,700**	**50,700**	**54,300**	**48,200**	**57,100**	
Chemist	46,000	37,600	39,400	43,200	48,400	47,700	50,200	54,100	58,000	53,800	
Physicist/Astronomer	48,400	38,600	38,700	42,800	48,700	51,200	53,900	55,000	60,000	61,200	
MATHEMATICAL SCIENTIST	**42,100**	**30,600**	**33,200**	**36,400**	**44,000**	**43,600**	**46,000**	**50,700**	**51,400**	**50,100**	
Mathematician	41,800	30,900	32,500	36,500	42,500	43,300	45,700	50,300	51,300	50,200	
Statistician	43,700		35,500	36,200	45,100	46,700	46,600				
COMPUTER/INFO. SPECIALIST	**46,000**	**42,100**	**43,400**	**45,300**	**46,600**	**47,100**	**49,900**	**60,700**	**49,800**		
ENVIRONMENTAL SCIENTIST	**46,600**	**33,200**	**34,000**	**42,100**	**44,800**	**50,800**	**54,300**	**53,800**	**57,000**	**60,000**	
Earth Scientist	47,500		36,500	43,600	45,500	50,200	51,600	53,600	59,600	55,900	
Oceanographer	42,300		29,600	38,300	39,400	51,800	58,000				
Atmospheric Scientist	47,300			40,000	47,000	55,700					
ENGINEER	**42,400**	**39,400**	**43,000**	**48,100**	**54,100**	**56,900**	**59,300**	**59,000**	**58,500**	**60,300**	
LIFE SCIENTIST	**41,700**	**28,800**	**31,100**	**35,900**	**40,700**	**45,900**	**48,000**	**50,100**	**51,300**	**51,300**	**50,800**
Biological Scientist	40,500	28,300	30,800	34,800	40,100	45,000	46,700	49,400	50,200	49,800	48,800
Agricultural Scientist	41,200		30,900	34,900	40,100	45,500	45,800	48,500	50,300	45,800	
Medical Scientist	45,900		32,700	39,600	45,300	50,700	51,300	53,600	60,200	65,100	61,200
PSYCHOLOGIST	**39,500**	**26,800**	**30,800**	**35,200**	**39,700**	**54,500**	**42,700**	**48,000**	**47,300**	**48,000**	**45,600**
SOCIAL SCIENTIST	**40,500**	**31,700**	**30,900**	**34,700**	**40,500**	**41,900**	**45,600**	**46,000**	**48,500**	**51,500**	**48,200**
Economist	46,100		36,100	39,300	48,400	52,200	52,000	47,500	54,300	53,300	
Sociologist/Anthropologist	37,200		25,900	30,800	35,900	38,600	39,400	44,000	44,600	48,200	
Other Social Scientist	38,300		28,700	33,700	39,300	41,500	45,700	43,100	46,900	51,700	

NOTE: All median salaries were computed only for full-time employed civilians. No median was computed for groups with fewer than 20 individuals reporting salary.

SOURCE: National Research Council, Science and Engineering Doctorates in the U.S., 1985 Profile, unpublished.

TABLE 39

MEDIAN ANNUAL SALARIES OF SCIENTISTS & ENGINEERS BY FIELD, AGE, AND SEX, 1985

FIELD	AGE															
	30 - 34		35-39		40-44		45-49		50-54		55-59		60-64		TOTAL	
	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
ALL FIELDS	**$36,800**	**$30,900**	**$40,300**	**$34,200**	**$46,000**	**$36,200**	**$49,700**	**$38,300**	**$50,700**	**$39,000**	**$52,600**	**$40,700**	**$52,900**	**$42,400**	**$46,000**	**$35,500**
PHYSICAL SCIENTISTS	39,400	37,200	43,500	38,400	49,000	38,300	50,100	39,800	50,900	40,000	55,000	47,300	59,100	41,500	47,900	38,600
Chemists	39,900	37,300	44,000	37,800	49,200	37,700	48,300	39,800	50,400	38,500	54,900	47,300	58,900	41,400	47,100	38,200
Physicists/Astronomers	38,700	37,000	42,900	40,100	48,900	44,400	51,400	40,700	53,900	53,200	55,100		60,100		48,600	41,200
Mathematical Scientists	33,300	31,500	36,500	34,700	44,400	35,900	44,300	36,600	46,400	40,500	51,500	36,300	51,600	43,200	42,600	35,400
Mathematicians	33,100	29,200	36,600	33,400	42,900	35,200	43,800	37,800	46,000	40,500	51,600	36,800	51,500	40,800	42,300	34,700
Statisticians			36,000	37,000	45,200	39,300	49,500		46,700						44,200	36,600
Computer/Information Specialists	43,900	38,500	45,700	39,200	47,500	40,200	47,600	33,500	50,000	47,000	61,000				46,700	38,600
Environmental Scientists	34,300	32,500	42,300	38,800	45,100	40,000	50,900	40,300	54,500		53,800		57,300		47,300	38,700
Earth Scientists	36,800	32,900	43,800	39,000	45,700	42,500	50,300	45,100	51,900		53,600		60,000		48,000	39,200
Oceanographers			38,400	37,600	39,500		52,700		56,900						43,400	36,900
Atmospheric Scientists			40,100		47,100		55,700								47,600	39,100
Life Scientists	31,800	30,400	36,700	32,300	42,000	35,900	47,700	37,800	48,900	39,400	50,900	40,700	52,400	44,600	43,400	35,100
Biological Scientists	31,300	29,800	35,800	30,800	40,600	35,400	45,800	38,500	47,800	40,700	50,400	39,000	50,600	44,800	42,000	34,500
Agricultural Scientists	30,900	31,200	35,100	33,100	40,300	30,100	45,600		45,800		48,600		50,300		42,000	31,900
Medical Scientists	33,200	31,700	41,800	34,700	50,000	37,500	54,300	36,600	54,900	36,500	60,400	43,200	62,500	44,500	50,400	36,200
Psychologists	31,200	30,300	35,700	34,000	40,300	35,900	44,900	38,000	44,100	36,900	50,200	40,100	48,700	40,600	40,700	34,800
Social Scientists	32,700	28,600	34,900	33,400	41,700	35,100	43,000	38,200	46,300	36,900	46,800	39,300	50,000	42,000	41,600	34,600
Economists	36,600	32,700	39,300	42,000	48,800	37,800	52,400	42,300	52,300	43,700	47,700	39,600	54,300		46,600	38,300
Sociologists/ Anthropologist		24,500	30,600	32,300	36,800	31,200	38,700	38,100	39,800	37,000	46,800	38,700	45,300	40,200	39,200	34,200
Other Social Scientists	28,400	29,300	34,000	32,500	40,100	34,900	41,700	37,800	46,100	35,700	43,800	40,100	48,200	45,500	40,100	33,700
Engineers	43,200	42,400	48,200	45,200	54,400	45,500	56,900	45,200	59,500	52,500	59,000		58,600		52,600	43,900

NOTE: Median salaries were computed only for Ph.D.s employed full-time, excluding those in the U.S. military. Academic salaries were multiplied by 11/9 to adjust for a full-year scale. Medians were not reported for cells with less than 20 cases reporting salary or with a sampling error of more than + $2,000.

SOURCE: National Science Foundation, Characteristics of Doctoral Scientists and Engineers in the United States, 1985.

TABLE 40

MEDIAN ANNUAL SALARIES OF DOCTORAL SCIENTISTS AND ENGINEERS BY FIELD, SEX AND RACE, 1985

FIELD	Total	SEX		RACE				
		Men	Women	White	Black	Am. Indian	Asian	Hispanic
ALL FIELDS	**$44,800**	**$46,000**	**$35,500**	**$44,800**	**$40,100**	**$42,100**	**$45,500**	**$42,200**
PHYSICAL SCIENTISTS	**47,000**	**47,900**	**38,600**	**47,600**	**42,700**		**44,300**	**47,300**
Chemists	46,000	47,100	38,200	46,700	41,700		44,000	46,300
Physicists/Astronomers	48,400	48,600	41,200	48,700	45,500		45,300	53,700
MATH. SCIENTISTS	**42,100**	**42,600**	**35,400**	**42,200**	**41,200**		**39,500**	**39,300**
Mathematicians	41,800	42,300	34,700	41,800	41,700		42,500	40,000
Statisticians	43,700	44,200	36,600	44,700			36,300	
COMPUTER/INFO. SPEC.	**46,000**	**46,700**	**38,600**	**45,900**			**46,900**	**48,600**
ENVIRON. SCIENTISTS	**46,600**	**47,300**	**38,700**	**46,100**			**53,000**	**40,600**
Earth Scientists	47,500	48,000	39,200	46,700			53,300	40,400
Oceanographers	42,300	43,400	36,900	42,300				
Atmospheric Scientists	47,300	47,600	39,100	47,000			50,300	
ENGINEERS	**52,400**	**52,600**	**43,900**	**53,600**	**45,600**		**50,300**	**50,100**
LIFE SCIENTISTS	**41,700**	**43,400**	**35,100**	**41,800**	**40,000**	**39,800**	**41,000**	**40,600**
Biological Scientists	40,500	42,000	34,500	40,500	37,200		40,500	41,700
Agricultural Scientists	41,200	42,000	31,900	41,500	39,600		36,300	34,700
Medical Scientists	45,900	50,400	35,200	46,300	41,700		43,700	46,000
PSYCHOLOGISTS	**39,500**	**40,700**	**34,800**	**39,700**	**35,400**		**37,200**	**36,600**
SOCIAL SCIENTISTS	**40,500**	**41,600**	**34,600**	**40,600**	**38,600**		**39,600**	**36,500**
Economists	46,100	46,600	38,300	46,500	41,300		40,700	52,200
Soc./Anthropologists	37,200	39,200	34,200	37,600	31,400		32,800	36,000
Other Social Scientists	38,300	40,100	33,700	38,300	39,300		38,300	31,000

NOTE: All median salaries were computed only for full-time employed civilians.
No median was computed for groups with fewer than 20 individuals reporting salary.

SOURCE: National Science Foundation, Characteristics of Recent Science/Engineering Graduates: 1986, In press.

TABLE 41

1986 MEDIAN ANNUAL SALARIES OF 1984-85 SCIENCE/ENGINEERING BACCALAUREATE GRADUATES* BY FIELD OF DEGREE, S/E EMPLOYMENT STATUS AND SEX

FIELD OF DEGREE	TOTAL EMPLOYED			SCIENCE/ENGINEERING EMPLOYED			NON-SCIENCE/ENGINEEERING EMPLOYED		
	Total	Men	Women	Total	Men	Women	Total	Men	Women
TOTAL	$25,000	$27,000	$20,000	$27,200	$28,300	$23,500	$19,000	$20,400	$17,300
Physical Sciences	21,400	22,000	20,500	22,000	22,000	22,500	16,400	22,000	
Chemistry	21,600	21,000	22,000	22,000	21,000	23,000	20,400		
Physics/Astronomy	28,300	28,500		28,800	28,900				
Other Physical Sciences	17,400	18,000	8,400	18,000	18,000				
Math/Statistics	24,100	26,200	22,500	25,600	26,900	23,300	16,700	16,500	18,000
Computer Sciences	28,000	28,500	27,500	28,200	29,000	28,000	21,000	22,000	20,500
Environmental Sciences	20,000	20,400	17,000	20,000	21,000	18,500	17,800	20,000	14,400
Engineering	30,000	30,000	30,000	30,000	30,000	30,000	28,000	28,000	22,000
Life Sciences	17,000	18,000	16,000	17,800	18,400	16,000	16,000	16,000	15,000
Biology	16,500	16,700	16,500	17,500	18,000	17,000	15,000	15,000	15,000
Agricultural Sciences	18,000	18,400	14,900	18,000	18,400	14,900	17,900	20,000	15,000
Psychology	17,000	17,800	16,600	18,000		18,000	17,000	17,800	16,200
Social Sciences	20,000	21,800	18,000	20,000	22,500	16,000	20,000	20,500	18,500
Economics	22,000	22,100	20,600	21,900	22,900		22,000	22,000	
Sociology/ Anthropology	17,000	20,000	14,100				17,000		
Other Social Sciences	19,500	20,000	18,000	18,000			20,000	20,000	19,000

*Excludes individuals enrolled full-time in graduate school.

NOTES: Median annual salaries computed only for full-time employed civilians. Blanks indicate no median computed for groups with less than 20 respondents.

SOURCE: National Science Foundation, Characteristics of Recent Science/Engineering Graduates: 1986, In press.

TABLE 42

1986 MEDIAN ANNUAL SALARIES OF 1984-85 SCIENCE/ENGINEERING MASTER'S DEGREE GRADUATES* BY FIELD OF DEGREE, S/E EMPLOYMENT STATUS AND SEX

FIELD OF DEGREE	TOTAL EMPLOYED			SCIENCE/ENGINEERING EMPLOYED			NON-SCIENCE/ENGINEEERING EMPLOYED		
	Total	Men	Women	Total	Men	Women	Total	Men	Women
TOTAL	$32,500	$34,100	$26,300	$33,100	$34,900	$27,000	$25,700	$27,000	$24,000
Physical Sciences	30,000	30,000	27,500	30,000	31,000	29,100	18,300		
Chemistry	30,000	31,000	26,000	30,000	30,200	26,300			
Physics/Astronomy	30,000	30,000		31,200	31,200				
Other Physical Sciences	29,400	29,400		33,000	33,000				
Math/Statistics	31,500	32,100	28,100	31,100	32,000	28,100			
Computer Sciences	36,600	37,500	34,000	36,600	37,900	34,000	38,500		
Environmental Sciences	27,000	28,000	25,000	28,000	28,800	25,000			
Engineering	36,000	36,000	35,000	36,000	36,000	35,000	35,000	35,000	
Life Sciences	22,000	23,000	20,000	21,400	22,000	20,000	23,000	24,000	20,000
Biology	22,000	23,000	20,000	20,800	22,000	20,000	23,000		16,000
Agricultural Sciences	22,000	21,800	22,200	22,000	21,800	22,200	23,800	26,000	23,800
Psychology	23,100		23,400	21,000		20,000	25,700		
Social Sciences	24,600	26,000	22,500	25,000	27,600	24,000	23,000	24,000	20,000
Economics	26,300	26,400		26,300					
Sociology/ Anthropology	16,900		16,000				20,000		
Other Social Sciences	25,000	27,600	24,000	25,000	27,800		24,000		

* Excludes individuals enrolled full-time in graduate school.

NOTES: Median annual salaries computed only for full-time employed civilians. Blanks indicate no median computed for groups with fewer than 20 respondents.

SOURCE: National Science Foundation, Characteristics of Recent Science/Engineering Graduates: 1986, in Press.

TABLE 43

1986 MEDIAN ANNUAL SALARIES OF 1984-85 SCIENCE/ENGINEERING GRADUATES BY FIELD OF DEGREE AND TYPE OF EMPLOYER

FIELD OF DEGREE	TOTAL		TYPE OF EMPLOYER							
			Business & Industry		Educational Institutions		Federal Government		State & Local Governments	
	Bachelor's	Master's	Bachelor's	Master's	Bachelor's	Master's	Bachelor's	Master's	Bachelor's	Master's
TOTAL	$25,000	$32,500	$27,000	$35,000	$17,100	$22,900	$27,300	$30,000	$20,000	$26,000
Physical Sciences	21,400	30,000	23,000	31,000	17,800	24,000				
Chemistry	21,600	30,000	23,000	30,000						
Physics/Astronomy	28,300	30,000	30,000	32,000						
Other Physical Sciences	17,400	29,400	18,000	35,000		32,500				
Math/Statistics	24,300	31,500	26,500	35,000	19,600	27,700	26,900			
Computer Sciences	28,000	36,600	28,200	37,900	22,000	29,600	29,000		25,000	
Environmental Sciences	20,000	27,000	21,500	31,000	17,000	17,000	18,400	26,300	19,000	25,200
Engineering	30,000	36,000	30,000	36,300	19,600	29,700	28,500	34,000	25,800	30,900
Life Sciences	17,000	22,000	18,000	25,000	16,000	19,700	15,000	22,000	18,900	20,600
Biology	16,700	22,000	18,000	25,000	16,000	19,200				20,800
Agricultural Sciences	18,000	22,000	18,000	25,000	16,000	20,000	18,000	22,000	17,000	20,000
Psychology	17,000	23,100	20,000		17,000					
Social Sciences	20,000	24,600	21,000	28,000		12,200			19,000	25,000
Economics	22,000	26,300	22,000							
Sociology/ Anthropology	17,000	16,900	19,000							
Other Social Sciences	19,500	25,000	20,300	30,000						25,500

*Excludes individuals enrolled full-time in graduate school.

NOTES: Median annual salaries computed only for full-time employed civilians. Blanks indicate no median computed for groups with less than 20 respondents.

SOURCE: National Science Foundation, Characteristics of Recent Science/Engineering Graduates: 1986, In Press.

TABLE 44

1986 MEDIAN ANNUAL SALARIES OF 1984-85 SCIENCE/ENGINEERING BACHELOR'S, MASTERS' DEGREE GRADUATES*
BY FIELD OF STUDY AND PRIMARY WORK ACTIVITY

FIELD OF STUDY	TOTAL		PRIMARY WORK ACTIVITY									
			Research & Development		Management/ Administration		Production Inspection		Rep/Stat/ Computing Act.		Teaching	
	Bachelor's	Master's	Bachelor's	Master's	Bachelor's	Master's	Bachelor's	Master's	Bachelor's	Master's	Bachelor's	Master's
TOTAL	$25,000	$32,500	$29,400	$35,000	$22,000	$35,000	$26,700	$33,000	$26,000	$30,800	$18,000	$24,400
Physical Sciences	21,400	30,000	24,000	31,000	19,400	33,000	20,000	27,200	25,000		15,000	24,400
Chemistry	21,600	30,000	21,600	30,200			20,000					
Physics/Astronomy	28,300	30,000	30,000	31,500								
Other Physical Sciences	17,400	29,400										
Math/Statistics	24,100	31,500	27,000	34,600		40,000	20,000		26,900	30,000	19,600	26,900
Computer Sciences	28,000	36,600	30,000	38,100	28,100	42,000	28,500		27,000	34,000	22,000	31,800
Environmental Sciences	20,000	27,000	18,400	26,400	20,000		22,000	35,000	20,000	29,000	18,000	
Engineering	30,000	36,000	30,000	36,000	30,000	40,000	29,400	34,700	28,600	34,000	26,500	30,000
Life Sciences	17,000	22,000	16,500	20,000	18,000	22,000	17,400	22,000	18,000	22,300	18,200	21,800
Biology	16,500	22,000	16,500	20,000	18,000	23,000	16,400				18,200	21,400
Agricultural Sciences	18,000	22,000	15,600	20,000	18,500	21,000	18,000				18,000	24,000
Psychology	17,000	23,100			20,000	-					15,000	
Social Sciences	20,000	24,600	20,300	22,500	20,000	30,000			20,000	26,300	18,900	12,200
Economics	22,000	26,300										
Sociology/ Anthropology	17,000	16,900										
Other Social Sciences	19,500	25,000			20,000	30,000						

*Excludes individuals enrolled full-time in graduate school.

NOTES: Median annual salaries computed only for full-time employed civilians. Blanks indicate no median computed for groups with less than 20 respondents.

SOURCE: National Science Foundation, Characteristics of Recent Science/Engineering Graduates: 1986, In press.

TABLE 45

1986 MEDIAN ANNUAL SALARIES OF 1984-85 SCIENCE/ENGINEERING GRADUATES* BY FIELD OF EMPLOYMENT, DEGREE LEVEL AND SEX

FIELD OF EMPLOYMENT	TOTAL		MEN		WOMEN	
	B.S.	M.S.	B.S.	M.S.	B.S.	M.S.
TOTAL	$27,200	$33,100	$28,300	$34,900	$23,500	$27,000
Physical Sciences	20,000	31,000	19,500	30,200	22,500	31,000
Chemistry	20,000	30,000	20,000	31,000	20,500	25,000
Physics/Astronomy	26,500	30,000		29,000		
Other Physical Sciences	19,600	28,000	19,600	30,000		
Math/Statistics	22,000	30,600	23,000	32,000	21,400	27,000
Computer Sciences	28,100	36,000	29,000	36,900	27,000	33,700
Environmental Sciences	20,000	30,000	20,000	30,100	18,500	28,000
Engineering	30,000	36,000	30,000	36,000	30,100	35,500
Life Sciences	16,500	20,300	17,000	21,500	16,000	20,000
Biology	17,000	20,000	16,500	21,000	17,000	20,000
Agricultural Sciences	17,500	21,800	19,000	21,000	15,000	22,500
Psychology	16,000	20,000				
Social Sciences	18,000	22,500	20,000	22,500	15,100	22,500
Economics	21,900	26,300				
Sociology/ Anthropology	19,000					
Other Social Sciences	19,000	25,000	19,500	25,000		

* Excludes individuals enrolled full-time in graduate school.

NOTES: Median annual salaries computed only for full-time employed civilians. Blanks indicate no median computed for groups with fewer than 20 respondents.

SOURCE: National Science Foundation, Characteristics of Recent Science/Engineering Graduates: 1986. ~~In press.~~

TABLE 46

1986 MEDIAN ANNUAL SALARIES OF 1984-85 SCIENCE/ENGINEERING GRADUATES* BY FIELD, RACIAL/ETHNIC GROUP AND DEGREE LEVEL

RACIAL/ETHNIC GROUP	FIELD		
	Total S/E Fields	Total Sciences	Total Engineering
ALL GROUPS			
Bachelors	$25,000	$21,000	$30,000
Master's	32,500	29,000	36,000
WHITE			
Bachelor's	25,000	21,000	30,000
Master's	32,500	29,000	36,000
BLACK			
Bachelor's	22,500	19,000	30,000
Master's	35,000	27,000	40,000
ASIAN			
Bachelor's	26,000	24,500	29,500
Master's	33,000	30,000	34,000
HISPANIC			
Bachelor's	22,000	21,000	28,300
Master's	30,000	26,000	35,000

* Excludes individuals enrolled full-time in graduate school.

NOTES: Median annual salaries computed only for full-time employed civilians. Blanks indicate no median computed for groups with fewer than 20 respondents.

SOURCE; U.S. Department of Education, Center for Education Statistics, Digest of Education Statistics, 1987, May 1987

TABLE 47

AVERAGE ANNUAL SALARY OF 1983-84 BACHELOR'S DEGREE RECIPIENTS IN JUNE 1985 BY OCCUPATIONAL AREA

OCCUPATIONAL AREA	Salary
Engineering	$25,900
Computer Science	24,300
Health Professional	21,300
Business	19,200
Public Affairs	14,600
Fine Arts	16,900
Communications	14,300
Education	17,900*
Technician	18,300

*Adjusted to a 12-Month Period.

TABLE 48

AVERAGE ANNUAL SALARY OF 1983-84 BACHELOR'S DEGREE RECEIPIENTS IN JUNE 1985 BY FIELD OF STUDY

FIELD OF STUDY	Salary
Engineering	$24,100
Physical Sciences & Mathematics	17,500
Biological Sciences	15,100
Psychology	14,600
Social Sciences	15,800
Humanities	14,000
Health	20,800
Communications	16,200
Business & Management	18,700
Public Affairs & Services	15,100
Education	13,800
TOTAL	17,700

SOURCE: Abbott, Langer & Associates, Compensation and Benefits in Research and Development, 1986.

TABLE 49

MEAN AND MEDIAN ANNUAL SALARIES OF SCIENTISTS & ENGINEERS ENGAGED IN RESEARCH & DEVELOPMENT ACTIVITIES BY JOB POSITION AND DISCIPLINE, 1986

DISCIPLINE	JOB POSITION									
	Directors[1]		Managers[2]		Section Heads[3]		Unit Supervisors[4]		Research/Development Specialists[5]	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median
ENGINEERING	**$65,201**	**$62,802**	**$57,755**	**$57,955**	**$55,552**	**$55,434**	**$50,041**	**$50,622**	**$42,267**	**$41,400**
Aeronautical/Aerospace Engrg.									38,908	39,660
Agricultural Engineering									33,412	32,320
Ceramic Engineering									44,232	41,674
Chemical Engineering			63,118	62,650	51,391	54,600	47,499	49,582	37,631	33,524
Civil Engineering									33,960	35,100
Electrical/Electronics Engrg.	56,133	57,900	61,464	62,490	61,984	62,934	49,153	50,280	44,355	40,820
Geothermal Engineering									38,700	38,400
Materials Engineering									36,482	35,963
Mechanical Engineering	56,955	58,150	58,302	56,500	48,272	48,456	51,350	52,300	44,344	44,850
Metallugical Engineering			56,151	62,880	57,926	56,184			43,431	41,928
Optical Engineering									31,880	31,807
PHYSICAL SCIENCES	**64,847**	**70,140**	**60,010**	**59,900**	**50,623**	**52,650**	**45,749**	**44,564**	**39,005**	**36,000**
Chemistry	63,280	70,140	54,864	57,950	49,873	45,733	43,170	43,300	35,272	33,612
Earth Sciences									34,952	36,000
Marine Sciences									36,133	36,000
Metallurgy									45,718	45,744
Physics	79,634	81,000	73,977	73,938	53,080	54,360	58,056	57,900	48,965	46,825
Computer Sciences					51,751	54,597	44,692	43,888	37,350	34,762
Mathematics & Statistics			65,542	59,355	50,288	52,188	38,279	37,650	42,438	43,350
LIFE SCIENCES	**53,660**	**51,396**	**41,642**	**41,159**	**41,755**	**42,000**	**36,565**	**37,400**	**27,836**	**22,750**
Agriculture	72,204	76,500	51,720	51,000	55,776	54,000	36,528	35,375	28,268	21,200
Biochemistry							33,641	35,950	23,667	21,400
Biology	52,328	58,000	32,786	25,000	43,603	42,000	36,938	38,000	30,321	26,000
Biophysics									22,608	20,800
Medicine/Osteopathy									24,751	21,425
Pharmacology									24,627	22,650
Psychology	42,992	40,000							38,795	40,800
Veterinary Medicine									22,798	22,950

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[1] Scientists, engineers or technologists whose responsibilities range from primarily managerial to primarily performing research and/or development depending upon level.

[2] Scientists, engineering or technologists whose reponsibilities range from devoting a major portion of time to supervisory and/or administrative functions while performing individual research and/or development to devoting a small portion of time to supervisory and/or administrative functions and continuing to do individual research and/or development.

[3] Scientists, engineers or technologists who continue to do individual research and/or development but vary their time devoted to supervisory and administrative responsibilities from "significant" to "small."

[4] Scientists, engineers or technologists, commonly designated as "project leaders" doing individual research and supervising under 10.

[5] Scientists, engineers or technologists whose range of responsibilities vary from conducting independent research and/or development to conducting R&D work under frequent direction.

SOURCE: Abbott, Langer & Associates, Compensation and Benefits in Research and Development, 1986

TABLE 50

MEAN AND MEDIAN ANNUAL SALARIES OF SCIENTISTS & ENGINEERS ENGAGED IN RESEARCH & DEVELOPMENT ACTIVITIES BY JOB POSITION & METROPOLITAN AREA, 1986

METROPOLITAN AREA	JOB POSITION									
	Directors[1]		Managers[2]		Section Heads[3]		Unit Supervisors[4]		Research/Development Specialists[5]	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median
Chicago (IL/IN) & Vicinity	$	$	$57,812	$62,880	$52,191	$54,840	$	$	$46,105	$47,352
Dayton (OH) & Vicinity			60,432	60,408		—	51,360	51,480	39,045	39,150
Denver/Colorado Springs (CO) & Vicinity			62,655	62,300	49,875	49,600	52,284	52,300	37,551	37,450
Detroit (MI) & Vicinity	76,464	73,158							52,708	50,646
Honolulu (HI) & Vicinity					50,818	50,004	42,574	43,590	30,121	30,750
Houston (TX) & Vicinity			55,336	53,484	56,256	55,900	44,144	43,836	38,290	37,336
Louisville, (KY/IN) & Vicinity			44,054	46,870					28,380	29,759
Minneapolis/St. Paul (MN/WI) & Vicinity									35,944	35,963
Newark/Jersey City (NJ) & Vicinity			55,430	57,450			41,333	41,300	28,407	29,595
New York City (NY)-5 boroughs	78,838	72,000	55,540	54,330	65,500	65,500			43,085	42,540
Oklahoma City (OK) & Vicinity			65,263	66,072			42,140	38,862	43,618	40,414
Philadelphia (PA/NJ) & Vicinity	47,300	48,000							24,443	22,950
Phoenix (AZ) & Vicinity									38,958	41,400
Pittsburgh (PA) & Vicinity									38,324	36,300
Portland (OR) & Vicinity	39,714	39,048								
Providence (RI/MA) & Vicinity									27,143	29,300
Sacramento (CA) & Vicinity									25,219	25,500
Salt Lake City/Ogden (UT) & Vicinity	73,567	70,140			39,688	39,365	38,277	38,000	41,433	45,744
San Jose (CA) & Vicinity			77,288	77,322	64,508	65,598	55,454	54,696	55,505	54,696
Washington/Baltimore (DC/MD/VA) & Vicinity	61,336	48,000	54,716	59,040					38,913	37,020

[1] Scientists, engineers or technologists whose responsibilities range from primarily managerial to primarily performing research and/or development depending upon level.

[2] Scientists, engineering or technologists whose reponsibilities range from devoting a major portion of time to supervisory and/or administrative functions while performing individual research and/or development to devoting a small portion of time to supervisory and/or administrative functions and continuing to do individual research and/or development.

[3] Scientists, engineers or technologists who continue to do individual research and/or development but vary their time devoted to supervisory and administrative responsibilities from "significant" to "small."

[4] Scientists, engineers or technologists, commonly designated as "project leaders" doing individual research and supervising under 10.

[5] Scientists, engineers or technologists whose range of responsibilities vary from conducting independent research and/or development to conducting R&D work under frequent direction.

SOURCE: Abbott, Langer & Associates, Compensation and Benefits in Research and Development, 1986

TABLE 51

MEAN AND MEDIAN ANNUAL SALARIES OF SCIENTISTS & ENGINEERS ENGAGED IN RESEARCH & DEVELOPMENT ACTIVITIES BY JOB POSITION AND GEOGRAPHIC REGION, 1986

GEORGRAPHIC REGION	JOB POSITION									
	Directors[1]		Managers[2]		Section Heads[3]		Unit Supervisors[4]		Research/Development Specialists[5]	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median
Northeastern States	$62,309	$58,980	$53,119	$54,230	$47,649	$46,956	$35,779	$36,450	$34,222	$34,400
Southern States	54,865	47,500	47,608	44,685	46,433	49,390			37,897	36,240
Midwestern States	66,809	66,654	54,518	57,505	54,921	55,368	49,644	49,582	31,450	30,600
North Central States	48,296	49,500	45,466	46,800	42,643	43,400	35,854	34,000	32,420	30,340
Southwestern States	65,780	72,000	58,086	59,857	57,315	56,264	41,973	42,380	41,187	39,755
Mountain States	64,625	68,500	60,542	60,250	41,782	40,865	47,628	49,200	39,039	39,660
Pacific States	58,957	51,396	72,854	74,400	54,138	54,360	51,457	51,462	46,808	48,300

TABLE 52

MEAN AND MEDIAN ANNUAL SALARIES OF SCIENTISTS & ENGINEERS ENGAGED IN RESEARCH & DEVELOPMENT ACTIVITIES BY SELECTED STATES AND JOB POSITION, 1986

STATE	JOB POSITION									
	Directors[1]		Managers[2]		Section Heads[3]		Unit Supervisors[4]		Research/Development Specialists[5]	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median
Arizona	$	$	$	$	$	$	$	$	$38,526	$39,600
California	71,415	76,057	73,764	75,222	56,464	58,350	55,264	54,330	52,815	53,406
Illinois			48,266	45,360	53,831	54,000			27,205	19,500
Iowa			43,248	46,800	43,197	43,400	35,947	34,000	31,510	30,250
Michigan	74,415	66,654	54,974	55,900			46,444	45,994	38,202	37,284
Ohio	62,242	68,556	54,012	59,796			51,360	51,480	38,264	38,550
Oregon	41,582	39,048							36,133	36,000
Pennsylvania	52,722	50,000	41,645	39,500	36,666	36,300	31,850	29,400	25,016	24,000
South Carolina									49,119	46,950
Texas	85,357	86,000	53,781	48,000	53,617	55,562	44,144	43,836	41,155	40,014

[1] Scientists, engineers or technologists whose responsibilities range from primarily managerial to primarily performing research and/or development depending upon level.

[2] Scientists, engineering or technologists whose reponsibilities range from devoting a major portion of time to supervisory and/or administrative functions while performing individual research and/or development to devoting a small portion of time to supervisory and/or administrative functions and continuing to do individual research and/or development.

[3] Scientists, engineers or technologists who continue to do individual research and/or development but vary their time devoted to supervisory and administrative responsibilities from "significant" to "small."

[4] Scientists, engineers or technologists, commonly designated as "project leaders" doing individual research and supervising under 10.

[5] Scientists, engineers or technologists whose range of responsibilities vary from conducting independent research and/or development to conducting R&D work under frequent direction.

SOURCE: Abbott, Langer & Associates, Compensation and Benefits in Research and Development, 1986.

TABLE 53

MEAN AND MEDIAN ANNUAL SALARIES OF SCIENTISTS & ENGINEERS ENGAGED IN RESEARCH & DEVELOPMENT ACTIVITIES BY JOB POSITION & LENGTH OF EXPERIENCE, 1986

LENGTH OF EXPERIENCE	JOB POSITION									
	Directors[1]		Managers[2]		Section Heads[3]		Unit Supervisors[4]		Research/Development Specialists[5]	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median
Under One Year	$	$	$	$	$	$	$39,433	$40,400	$33,077	$31,450
One or Two Years			53,363	57,500	41,200	46,500	42,150	38,250	30,837	30,525
Three or Four Years			44,157	48,170	32,544	26,831	39,302	38,210	31,610	31,807
Five through Nine Years	45,422	43,000	49,487	49,500	43,758	42,200	40,164	43,732	35,174	35,640
10 through 14 Years	54,495	59,900	55,481	58,370	44,110	42,380	40,435	40,690	39,179	38,820
15 through 19 Years	69,681	75,000	58,197	61,100	52,211	54,340	49,458	50,400	43,896	44,616
20 through 24 Years	68,634	70,140	64,205	64,990	53,624	56,420	48,815	50,540	47,213	46,980
25 through 29 Years	63,969	59,400	66,495	64,947	59,412	60,372	49,236	51,300	49,116	49,380
30 Years or More	70,632	75,000	63,989	61,140	59,217	58,224	51,496	53,730	51,530	51,894

TABLE 54

MEAN AND MEDIAN ANNUAL SALARIES OF SCIENTISTS & ENGINEERS ENGAGED IN RESEARCH & DEVELOPMENT ACTIVITIES BY JOB POSITION & LEVEL OF EDUCATION, 1986

LEVEL OF EDUCATION	JOB POSITION									
	Directors[1]		Managers[2]		Section Heads[3]		Unit Supervisors[4]		Research/Development Specialists[5]	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median
No College	$	$	$45,438	$50,970	$54,757	$43,873	$48,300	$50,604	$41,085	$40,525
Some College, No Degree			46,506	45,950			46,190	48,300	40,106	39,690
A.A. (2-Year) Degree			51,389	54,280					39,392	39,980
Bachelor's Degree	55,972	56,525	55,486	57,500	46,551	46,800	42,021	43,732	29,467	29,120
Master's Degree	67,597	67,308	57,425	58,770	50,136	54,228	46,886	47,400	37,521	37,530
Doctorate	62,607	61,500	59,235	57,400	53,763	54,360	44,988	44,640	40,167	38,700

[1] Scientists, engineers or technologists whose responsibilities range from primarily managerial to primarily performing research and/or development, depending upon level.

[2] Scientists, engineering or technologists whose reponsibilities range from devoting a major portion of time to supervisory and/or administrative functions while performing individual research and/or development to devoting a small portion of time to supervisory and/or administrative functions and continuing to do individual research and/or development.

[3] Scientists, engineers or technologists who continue to do individual research and/or development but vary their time devoted to supervisory and administrative responsibilities from "significant" to "small."

[4] Scientists, engineers or technologists, commonly designated as "project leaders" doing individual research and supervising under 10.

[5] Scientists, engineers or technologists whose range of responsibilities vary from conducting independent research and/or development to conducting R&D work under frequent direction.

SOURCE: Abbott, Langer & Associates, Compensation and Benefits in Research and Development, 1986.

TABLE 55

MEAN AND MEDIAN ANNUAL SALARIES OF SCIENTISTS & ENGINEERS ENGAGED IN RESEARCH & DEVELOPMENT ACTIVITIES BY JOB POSITION & TYPE OF EMPLOYER, 1986

TYPE OF EMPLOYER	JOB POSITION									
	Directors[1]		Managers[2]		Section Heads[3]		Unit Supervisors[4]		Research/Development Specialists[5]	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median
All Manufacturing Organizations	$64,267	$64,000	$56,541	$58,385	$47,958	$49,050	$42,198	$42,926	$39,895	$39,690
Aerospace/Aircraft/ Electrical/ Electronics Manufacturers	67,554	70,140	59,513	63,000	54,690	55,562	43,748	43,784	41,231	39,660
Chemical/Pharmaceutical/ Plastics/ Rubber Manufacturers	51,433	48,000	55,403	57,500	44,952	43,800	42,725	42,600	34,463	31,807
Other Mfg. Organizations	66,346	64,104	56,615	57,995	46,625	46,500	41,502	42,400	41,604	41,630
All Non-Mfg. Organizations	59,941	56,350	56,802	54,000	53,458	54,360	48,291	50,400	32,561	30,000
Educational Institutions	59,030	63,350	49,443	52,083	47,654	49,207	50,055	51,120	29,412	26,000
Other Non-Mfg. Organizations	60,608	51,396	63,610	69,312	55,755	57,060	45,833	47,532	46,483	49,190

TABLE 56

MEAN AND MEDIAN ANNUAL SALARIES OF SCIENTISTS & ENGINEERS ENGAGED IN RESEARCH & DEVELOPMENT ACTIVITIES BY JOB POSITION & WORK FUNCTION, 1986

WORK FUNCTION	JOB POSITION									
	Directors[1]		Managers[2]		Section Heads[3]		Unit Supervisors[4]		Research/Development Specialists[5]	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median
Pure Research	$64,824	$60,000	$73,423	$75,222	$59,993	$59,580	$46,896	$49,122	$52,012	$53,640
Applied Research	57,742	51,396	55,376	57,750	50,268	54,542	46,793	46,330	39,404	39,700
Development	56,705	57,350	51,654	51,500	41,646	34,000	42,015	42,870	41,275	41,028
Research & Development			54,959	56,500	49,180	49,053	42,003	43,300	31,920	31,650

[1] Scientists, engineers or technologists whose responsibilities range from primarily managerial to primarily performing research and/or development, depending upon level.

[2] Scientists, engineering or technologists whose reponsibilities range from devoting a major portion of time to supervisory and/or administrative functions while performing individual research and/or development to devoting a small portion of time to supervisory and/or administrative functions and continuing to do individual research and/or development.

[3] Scientists, engineers or technologists who continue to do individual research and/or development but vary their time devoted to supervisory and administrative responsibilities from "significant" to "small."

[4] Scientists, engineers or technologists, commonly designated as "project leaders" doing individual research and supervising under 10.

[5] Scientists, engineers or technologists whose range of responsibilities vary from conducting independent research and/or development to conducting R&D work under frequent direction.

SOURCE: Battelle Columbus Laboratories, Report on 1986 National Survey of Compensation Paid Scientists and Engineers Engaged in Research and Development Activities, January 1987.

TABLE 57

NUMBER AND MEAN MONTHLY SALARIES OF BACHELOR'S DEGREE NONSUPERVISORY SCIENTISTS AND ENGINEERS ENGAGED IN R&D BY WORKING-AS-OCCUPATION AND SELECTED YEARS SINCE DEGREE, 1986

WORKING-AS-	SELECTED YEARS SINCE FIRST DEGREE									
OCCUPATION	2	4	7	10	13	15	20-21	24-25	30-31	Total*
Aeronautical & Astronautical Engineering	(110) $2,305	(85) $2,620	(52) $2,967	(20) $3,040	(8) $3,300	(10) $3,760	(41) $3,822	(64) $4,041	(38) $4,139	(1,275) $3,210
Chemical Engineering	(63) 2,395	(64) 2,739	(56) 2,923	(40) 3,200	(18) 3,378	(16) 3,450	(18) 3,667	(23) 4,122	(18) 4,189	(918) 3,194
Civil Engineering	(11) 2,345	(13) 2,477	(10) 2,960	(4) 3,375	(2) 2,950	(2) 3,800	(2) 3,400	(2) 3,500	(2) 3,450	(124) 2,990
Electrical & Electronic Engineering	(1,274) 2,490	(968) 2,781	(607) 3,163	(308) 3,459	(247) 3,639	(195) 3,730	(276) 4,115	(282) 4,197	(193) 4,331	(11,977) 3,248
Industrial Engineering	(9) 2,122	(6) 2,350	(4) 2,825	(1) 3,300	(6) 3,167	(3) 3,500	(2) 4,250	(33) 3,933	(4) 4,000	(110) 3,062
Materials Engineering	(28) 2,418	(27) 2,615	(11) 2,991	(10) 3,000	(8) 3,225	(8) 3,100	(11) 3,573	(9) 4,133	(6) 4,067	(372) 3,097
Mechanical Engineering	(225) 2,431	(219) 2,697	(142) 3,103	(75) 3,307	(57) 3,584	(62) 3,723	(81) 4,133	(76) 4,117	(74) 4,366	(3,078) 3,327
Metallurgical Engineering	(6) 2,100	(12) 2,600	(9) 3,022	(3) 3,000	(1) 2,400	(3) 3,033	(5) 3,540	(6) 4,367	(7) 4,243	(154) 3,285
Mining & Petroleum Engineering	(6) 2,317	(8) 1,988	(8) 2,500	(1) 3,100	(2) 3,600	(3) 2,700	(4) 3,125	(4) 3,800	(3) 3,167	(129) 2,882
Nuclear & Reactor Engineering	(124) 2,437	(83) 2,700	(87) 2,971	(36) 3,281	(33) 3,539	(14) 3,779	(40) 4,155	(38) 4,361	(44) 4,364	(1,523) 3,367
Ocean Science Engineering	(17) 2,424	(7) 2,486	(13) 2,915	(7) 2,900	(4) 3,500	(3) 2,467	(7) 3,514	(5) 4,040	(2) 4,200	(169) 3,063
Total Engineering	(1,891) 2,459	(1,516) 2,736	(1,023) 3,096	(517) 3,361	(392) 3,570	(327) 3,657	(495) 4,037	(519) 4,165	(400) 4,293	(20,150) 3,256
Agricultural & Biological Sciences	(31) 1,335	(29) 1,628	(25) 1,796	(21) 2,300	(18) 2,489	(11) 2,382	(15) 2,400	(13) 2,777	(7) 2,971	(484) 2,111
Atmospheric, Earth, Marine & Space Sciences	(11) 1,827	(8) 2,038	(11) 2,682	(5) 2,360	(8) 2,788	(2) 2,700	(4) 3,425	(3) 3,233	(1) 4,000	(142) 2,486
Chemistry	(84) 1,742	(47) 1,917	(62) 2,313	(46) 2,561	(27) 2,804	(23) 2,757	(45) 3,211	(32) 3,306	(37) 3,605	(1,252) 2,663
Computer Sciences	(219) 2,377	(186) 2,736	(87) 3,122	(49) 3,139	(29) 3,307	(33) 3,627	(40) 3,798	(36) 3,665	(11) 4,245	(1,861) 2,939
Mathematics & Statistics	(23) 1,943	(20) 2,345	(11) 2,891	(6) 2,750	(9) 3,322	(16) 3,013	(13) 3,785	(26) 3,950	(14) 3,363	(425) 3,189
Physics	(32) 2,197	(39) 2,503	(23) 2,848	(13) 3,308	(14) 3,043	(11) 3,391	(33) 3,864	(32) 3,957	(24) 4,071	(656) 3,353
Economics	(12) 1,675	(7) 1,986	(5) 2,360	(1) 2,900	(4) 2,650	(2) 3,900	(2) 3,550	(1) 3,400	(3) 3,733	(98) 2,578

*Total includes all years since first degree. NOTE: Numbers in parenthesis are survey respondents.

SOURCE: Battelle Columbus Laboratories, Report on 1986 National Survey of Compensation Paid Scientists and Engineers Engaged in Research and Development Activities, January 1987.

TABLE 58

NUMBER AND MEAN MONTHLY SALARIES OF MASTER'S DEGREE NONSUPERVISORY SCIENTISTS AND ENGINEERS ENGAGED IN R&D BY WORKING-AS-OCCUPATION AND SELECTED YEARS SINCE DEGREE, 1986

WORKING-AS-OCCUPATION	SELECTED YEARS SINCE FIRST DEGREE									
	2	4	7	10	13	15	20-21	24-25	30-31	Total*
Aeronautical & Astronautical Engineering	(15) $2,767	(24) $2,658	(23) $3,074	(19) $3,311	(11) $3,782	(22) $3,541	(36) $4,006	(46) $3,928	(32) $4,422	(677) $3,732
Chemical Engineering	(5) 2,660	(19) 2,737	(30) 3,023	(24) 3,288	(30) 3,897	(18) 3,800	(15) 4,200	(13) 4,046	(9) 4,178	(532) 3,579
Civil Engineering	(7) 2,586	(8) 2,663	(9) 2,800	(11) 3,000	(2) 3,150	(3) 3,633	(8) 3,988	(4) 4,050	(3) 4,400	(121) 3,236
Electrical & Electronic Engineering	(26) 2,738	(130) 2,883	(183) 3,330	(182) 3,582	(163) 3,856	(144) 3,916	(232) 4,317	(212) 4,376	(144) 4,543	(4,433) 3,943
Industrial Engineering		(1) 2,500	(2) 2,900	(4) 3,175	(2) 3,250	(2) 3,350	(3) 3,667	(1) 3,500	(2) 4,050	(67) 3,442
Materials Engineering	(2) 2,750	(11) 2,809	(9) 2,978	(11) 3,018	(9) 3,189	(5) 3,740	(5) 4,000	(11) 4,155	(9) 4,044	(219) 3,493
Mechanical Engineering	(12) 2,758	(39) 2,826	(49) 3,165	(51) 3,437	(45) 3,818	(25) 3,804	(58) 4,121	(55) 4,447	(33) 4,452	(1,097) 3,773
Metallurgical Engineering		(3) 2,733	(3) 3,567	(4) 3,200	(6) 2,967	(3) 3,767	(7) 3,814	(3) 3,667	(5) 3,680	(111) 3,568
Nuclear & Reactor Engineering	(4) 2,525	(13) 2,708	(32) 3,050	(24) 3,221	(46) 3,676	(31) 3,890	(42) 4,229	(29) 4,376	(24) 4,375	(755) 3,723
Ocean Science Engineering	(1) 2,600	(2) 2,550	(6) 2,817	(3) 3,667	(8) 3,550	(11) 3,373	(10) 3,960	(7) 4,271	(5) 3,060	(130) 3,581
Total Engineering	(76) 2,703	(264) 2,808	(360) 3,197	(346) 3,433	(328) 3,769	(275) 3,825	(425) 4,210	(396) 4,312	(272) 4,408	(8,440) 3,811
Agricultural & Biological Sciences	(1) 1,800	(6) 1,667	(16) 1,944	(17) 2,129	(16) 2,763	(11) 2,691	(10) 3,020	(10) 2,950	(7) 3,657	(345) 2,476
Atmospheric, Earth, Marine & Space Sciences		(5) 2,260	(7) 2,286	(9) 2,689	(9) 2,522	(8) 3,188	(7) 3,200	(6) 3,550	(3) 3,367	(170) 2,961
Chemistry		(13) 2,115	(22) 2,395	(24) 2,800	(28) 3,189	(19) 2,989	(15) 3,353	(25) 3,572	(17) 4,071	(529) 3,190
Computer Sciences	(7) 2,729	(27) 2,907	(34) 3,126	(39) 3,349	(24) 3,388	(26) 3,412	(46) 3,937	(28) 4,018	(7) 3,871	(738) 3,518
Mathematics & Statistics	(6) 2,450	(16) 2,469	(11) 2,836	(16) 2,875	(11) 3,445	(11) 3,191	(33) 4,052	(19) 3,642	(10) 4,160	(346) 3,507
Physics	(3) 2,700	(10) 2,610	(19) 2,705	(19) 3,116	(14) 3,171	(18) 3,589	(26) 3,892	(35) 4,257	(22) 4,277	(509) 3,730
Economics	(1) 1,200	(1) 2,300	(9) 2,756	(13) 2,985	(4) 3,150	(6) 3,350	(3) 4,700	(1) 2,900		(120) 3,245

*Total includes all years since first degree. NOTE: Numbers in parenthesis are survey respondents. Blanks indicate no respondents

58 SOURCE: Battelle Columbus Laboratories, Report on 1986 National Survey of Compensation Paid Scientists and Engineers Engaged in Research and Development Activities, January 1987.

TABLE 59

NUMBER AND MEAN MONTHLY SALARIES OF DOCTORATE DEGREE NONSUPERVISORY SCIENTISTS AND ENGINEERS ENGAGED IN R&D BY WORKING-AS-OCCUPATION AND SELECTED YEARS SINCE DEGREE, 1986

WORKING-AS-OCCUPATION	SELECTED YEARS SINCE FIRST DEGREE									
	5	7	10	13	15	18-19	22-23	26-27	30-31	Total*
Aeronautical & Astronautical Engineering	(1) $3,600	(3) $2,967	(3) $3,600	(9) $3,567	(9) $3,711	(7) $3,971	(21) $4,505	(14) $4,207	(6) $4,317	(189) $4,138
Chemical Engineering	(7) 3,443	(14) 3,536	(16) 3,556	(19) 3,884	(15) 3,887	(29) 4,476	(27) 4,830	(22) 5,059	(5) 5,600	(397) 4,301
Civil Engineering		(2) 3,150	(2) 3,550	(4) 3,450	(3) 4,067	(6) 4,517	(3) 3,800	(4) 3,775	(2) 3,850	(61) 3,944
Electrical & Electronic Engineering	(1) 3,600	(30) 3,690	(40) 3,748	(29) 3,976	(33) 4,152	(84) 4,290	(108) 4,807	(59) 4,739	(34) 4,921	(1,075) 4,444
Materials Engineering		(3) 3,567	(7) 3,829	(9) 3,878	(10) 4,110	(16) 3,919	(10) 4,370	(14) 4,293	(4) 4,300	(184) 4,116
Mechanical Engineering	(2) 3,150	(6) 3,483	(8) 3,625	(12) 4,175	(19) 3,879	(34) 4,221	(33) 4,582	(28) 4,757	(21) 4,867	(373) 4,375
Metallurgical Engineering		(4) 3,000	(7) 3,586	(5) 3,940	(4) 4,025	(10) 4,750	(10) 4,630	(7) 4,300	(7) 4,657	(127) 4,138
Nuclear & Reactor Engineering		(2) 3,400	(5) 3,480	(7) 3,571	(8) 3,763	(17) 4,282	(21) 4,610	(20) 4,590	(12) 4,658	(265) 4,269
Ocean Science Engineering		(1) 3,700	(2) 3,600	(1) 3,200	(6) 3,983	(5) 4,420	(5) 4,620	(5) 4,420	(4) 4,900	(75) 4,256
Total Engineering	(13) 3,315	(71) 3,499	(101) 3,661	(104) 3,853	(118) 3,959	(227) 4,289	(264) 4,642	(199) 4,620	(102) 4,809	(2,992) 4,314
Agricultural & Biological Sciences	(3) 1,467	(17) 2,194	(41) 2,349	(47) 2,785	(46) 2,743	(61) 3,374	(54) 3,672	(38) 3,874	(32) 3,738	(832) 3,115
Atmospheric, Earth, Marine & Space Sciences	(1) 2,500	(1) 3,000	(8) 2,738	(5) 3,300	(9) 3,389	(18) 3,672	(14) 3,593	(13) 4,046	(5) 4,500	(208) 3,648
Chemistry	(6) 2,733	(40) 2,980	(58) 3,078	(38) 3,489	(54) 3,646	(102) 3,913	(75) 4,449	(55) 4,529	(43) 4,807	(1,243) 3,920
Computer Sciences	(3) 3,933	(7) 3,857	(11) 4,145	(13) 4,308	(17) 4,529	(29) 4,641	(24) 4,583	— (7) 4,657	(4) 4,075	(269) 4,370
Mathematics & Statistics	(5) 3,080	(13) 3,354	(11) 3,564	(16) 3,638	(12) 3,983	(29) 4,100	(27) 4,552	(20) 4,770	(13) 4,869	(389) 4,202
Physics	(3) 2,667	(23) 2,865	(45) 2,798	(39) 3,469	(47) 3,638	(74) 3,888	(100) 4,356	(78) 4,469	(49) 4,653	(1,211) 4,050
Economics	(1) 3,000	(3) 3,100	(7) 2,943	(3) 3,867	(5) 3,720	(12) 3,692	(4) 4,300	(5) 5,060	(6) 5,300	(135) 3,859
Sociology			(2) 2,350	(3) 3,267	(1) 3,000	(5) 3,280	(6) 3,650	(3) 4,300		(54) 3,474
Psychology		(1) 1,200	(4) 2,925	(5) 3,120	(3) 3,033	(11) 4,073	(9) 4,456	(4) 4,675	(6) 4,483	(113) 3,804

*Total includes all years since first degree. NOTE: Numbers in parenthesis are survey respondents.

SOURCE: Battelle Columbus Laboratories, Report on 1986 National Survey of Compensation Paid Scientists and Engineers Engaged in Research and Development Activities, January 1987.

TABLE 60

NUMBER AND MEAN MONTHLY SALARIES OF NONSUPERVISORY SCIENTISTS AND ENGINEERS ENGAGED IN R&D BY DEGREE LEVEL, TYPE OF ESTABLISHMENT, AND SELECTED YEARS SINCE FIRST DEGREE, 1986

TYPE OF ESTABLISHMENT & DEGREE LEVEL	SELECTED YEARS SINCE FIRST DEGREE									
	2	4	7	10	13	15	20-21	24-25	30-31	Total*
BACHELOR'S DEGREE										
Nonprofit Research Institutes	(298) $2,194	(179) $2,359	(133) $2,683	(47) $2,802	(44) $2,859	(38) $3,005	(53) $3,302	(54) $3,656	(32) $3,503	(2,456) $2,733
Educational Institutions	(38) 2,205	(45) 2,529	(22) 2,336	(19) 2,479	(7) 2,757	(17) 2,924	(13) 2,623	(12) 3,358	(7) 3,314	(533) 2,672
Contract Research Centers	(329) 2,528	(248) 2,730	(197) 3,047	(118) 3,377	(101) 3,650	(95) 3,773	(176) 4,094	(218) 4,367	(188) 4,507	(5,261) 3,640
Federal Establishments	(241) 2,152	(202) 2,451	(105) 2,915	(47) 3,009	(39) 3,167	(66) 3,289	(131) 3,708	(186) 3,939	(113) 4,063	(3,404) 3,160
Total Industry	(1,931) 2,473	(1,539) 2,782	(1,001) 3,128	(557) 3,313	(419) 3,550	(304) 3,692	(466) 4,060	(463) 4,145	(357) 4,257	(19,655) 3,227
MASTER'S DEGREE										
Nonprofit Research Institutes	(12) 2,783	(46) 2,615	(72) 2,857	(75) 3,036	(69) 3,361	(46) 3,330	(60) 3,873	(63) 4,079	(40) 4,280	(1,489) 3,391
Educational Institutions	(3) 1,933	(29) 2,407	(37) 2,630	(37) 2,581	(26) 2,696	(25) 2,716	(27) 3,107	(19) 3,179	(21) 3,138	(708) 2,840
Contract Research Centers	(26) 2,769	(111) 2,896	(156) 3,228	(144) 3,419	(163) 3,687	(137) 3,845	(264) 4,363	(266) 4,626	(187) 4,715	(4,706) 4,054
Federal Establishments	(5) 2,360	(28) 2,368	(29) 2,752	(38) 2,953	(27) 3,159	(38) 3,389	(87) 3,661	(84) 3,927	(54) 4,126	(1,232) 3,534
Total Industry	(62) 2,676	(229) 2,887	(324) 3,194	(312) 3,444	(279) 3,797	(240) 3,843	(377) 4,234	(321) 4,300	(192) 4,389	(7,046) 3,804
DOCTORAL DEGREE										
Nonprofit Research Institutes			(24) 3,254	(42) 3,081	(38) 3,397	(40) 3,695	(92) 4,250	(60) 4,175	(36) 4,594	(1,041) 3,901
Educational Institutions		(4) 1,800	(36) 2,228	(83) 2,458	(72) 2,960	(81) 2,917	(152) 3,800	(74) 3,820	(67) 3,996	(1,789) 3,344
Contract Research Centers	(1) 3,100	(1) 3,200	(43) 3,451	(107) 3,674	(130) 3,872	(145) 4,113	(375) 4,532	(285) 4,727	(154) 4,975	(3,782) 4,428
Federal Establishments		(1) 3,000	(7) 2,914	(16) 3,050	(22) 3,286	(29) 3,421	(53) 3,800	(58) 4,112	(32) 4,356	(709) 3,909
Total Industry	(2) 3,400	(4) 3,400	(79) 3,494	(100) 3,682	(93) 3,945	(119) 4,074	(196) 4,556	(147) 4,833	(75) 5,004	(2,581) 4,357

*Total includes all years since first degree. NOTE: Numbers in parenthesis are survey respondents.

SOURCE: Battelle Columbus Laboratories, Report on 1986 National Survey of Compensation Paid Scientists and Engineers Engaged in Research and Development Activities, January 1987.

TABLE 61

NUMBER AND MEAN MONTHLY SALARIES OF NONSUPERVISORY SCIENTISTS AND ENGINEERS ENGAGED IN R&D BY HIGHEST DEGREE FIELD AND SELECTED YEARS SINCE DEGREE, 1986

HIGHEST DEGREE FIELD	SELECTED YEARS SINCE FIRST DEGREE									
	2	4	7	10	13	15	20-21	24-25	30-31	Total*
BACHELOR'S DEGREE										
Engineering	(2,077) $2,481	(1,618) $2,767	(1,008) $3,141	(463) $3,425	(360) $3,630	(307) $3,701	(486) $4,136	(476) $4,230	(455) $4,354	(21,051) $3,298
Chemistry	(92) 1,801	(53) 1,979	(74) 2,399	(54) 2,644	(37) 2,984	(33) 3,073	(74) 3,396	(51) 3,598	(53) 3,792	(1,624) 2,906
Physics	(77) 2,292	(80) 2,636	(65) 3,043	(47) 3,383	(47) 3,551	(34) 3,726	(92) 3,925	(80) 4,170	(62) 4,387	(1,769) 3,576
Other Physical Sciences	(28) 2,236	(37) 2,357	(27) 2,826	(20) 3,025	(11) 3,318	(9) 3,600	(7) 3,229	(12) 4,325	(6) 3,933	(464) 3,097
Life Sciences	(40) 1,478	(42) 1,895	(47) 2,115	(40) 2,483	(34) 2,615	(20) 2,530	(19) 2,747	(19) 3,000	(13) 3,185	(792) 2,376
Social Sciences	(17) 1,782	(14) 2,200	(16) 2,531	(14) 2,736	(8) 2,813	(9) 3,267	(16) 3,463	(7) 3,586	(8) 4,225	(310) 2,954
Mathematics & Statistics	(204) 2,333	(128) 2,631	(95) 3,168	(63) 3,181	(63) 3,581	(61) 3,513	(106) 3,900	(123) 4,072	(59) 4,119	(2,466) 3,253
MASTER'S DEGREE										
Engineering	(86) 2,724	(304) 2,879	(385) 3,232	(317) 3,479	(306) 3,770	(235) 3,889	(405) 4,321	(412) 4,469	(285) 4,585	(8,411) 3,888
Chemistry	(1) 2,200	(18) 2,244	(18) 2,256	(20) 2,930	(27) 3,067	(18) 3,294	(21) 3,410	(27) 3,696	(28) 3,925	(622) 3,355
Physics	(5) 2,700	(22) 2,782	(27) 3,044	(35) 3,166	(30) 3,400	(40) 3,810	(70) 4,137	(79) 4,249	(55) 4,424	(1,229) 3,917
Other Physical Sciences		(7) 2,443	(20) 2,845	(21) 3,057	(18) 3,222	(16) 3,594	(15) 3,833	(28) 4,200	(7) 4,271	(451) 3,506
Life Sciences	(1) 1,800	(7) 1,857	(23) 2,161	(35) 2,491	(25) 2,908	(21) 3,033	(24) 3,471	(14) 3,193	(10) 3,710	(522) 2,751
Social Sciences	(2) 1,750	(3) 2,133	(11) 2,173	(20) 2,945	(15) 3,327	(6) 3,400	(13) 3,715	(9) 3,911	(8) 4,238	(267) 3,207
Mathematics & Statistics	(7) 2,471	(31) 2,606	(27) 2,974	(49) 3,292	(32) 3,572	(49) 3,488	(107) 3,953	(79) 4,058	(44) 4,327	(1,213) 3,750
DOCTORAL DEGREE										
Engineering	(1) 3,600	(1) 3,500	(72) 3,447	(87) 3,723	(87) 3,960	(96) 4,073	(262) 4,567	(224) 4,855	(90) 4,914	(2,699) 4,425
Chemistry		(4) 2,700	(42) 2,969	(68) 3,138	(55) 3,455	(69) 3,662	(120) 4,183	(84) 4,346	(66) 4,700	(1,713) 3,982
Physics		(3) 2,233	(25) 3,144	(60) 3,232	(65) 3,725	(77) 3,868	(198) 4,331	(159) 4,543	(92) 4,785	(2,116) 4,277
Other Physical Sciences			(3) 3,333	(25) 3,168	(22) 3,686	(45) 3,889	(49) 4,245	(29) 4,452	(26) 4,850	(638) 4,029
Life Sciences		(1) 2,800	(20) 2,425	(45) 2,500	(49) 2,918	(54) 2,887	(62) 3,753	(32) 3,697	(34) 3,876	(933) 3,272
Social Sciences		(1) 3,200	(5) 2,700	(17) 3,118	(13) 3,246	(12) 3,533	(35) 4,280	(17) 3,612	(12) 4,825	(399) 3,813
Mathematics & Statistics	(1) 3,100		(8) 3,600	(18) 3,678	(31) 3,871	(26) 3,981	(52) 4,419	(39) 4,528	(16) 4,881	(587) 4,276

*Total includes all years since first degree. NOTE: Numbers in parenthesis are survey respondents.

SOURCE: Battelle Columbus Laboratories, Report on 1986 National Survey of Compensation Paid Scientists and Engineers Engaged in Research and Development Activities, January 1987.

TABLE 62

NUMBER AND MEAN MONTHLY SALARIES OF NONSUPERVISORY PROFESSIONALS ENGAGED IN R&D BY WORKING-AS-OCCUPATION, DEGREE LEVEL, SEX AND SELECTED YEARS SINCE DEGREE, 1986

WORKING-AS-OCCUPATION, DEGREE, LEVEL & SEX	SELECTED YEARS SINCE FIRST DEGREE									
	2	4	7	10	13	15	20-21	24-25	30-31	Total*
BIOLOGICAL AND BIOMEDICAL SCI.										
Bachelor's Degree										
Men	(9) $1,300	(12) $1,667	(6) $1,700	(6) $2,033	(10) $2,620	(8) $2,563	(4) $3,350	(6) $2,983	(4) $3,100	(190) $2,282
Women	(21) 1,338	(11) 1,509	(19) 1,826	(9) 2,322	(7) 2,200	(2) 1,950	(9) 1,989	(6) 2,350	(3) 2,800	(250) 1,932
Master's Degree										
Men		(2) 1,650	(7) 1,886	(8) 2,138	(7) 2,714	(4) 3,075	(6) 2,800	(3) 3,067	(5) 4,060	(159) 2,541
Women		(2) 1,550	(6) 1,917	(5) 1,780	(3) 2,933	(2) 2,400	(1) 2,100	(2) 2,700	(1) 2,900	(106) 2,276
Doctoral Degree										
Men		(1) 2,800	(8) 1,800	(24) 2,321	(31) 2,742	(31) 2,784	(36) 3,628	(20) 3,800	(18) 3,867	(518) 3,164
Women			(3) 2,567	(10) 2,230	(8) 2,725	(7) 2,414	(6) 2,817	(2) 2,950	(2) 2,951	(128) 2,515
CHEMISTRY										
Bachelor's Degree										
Men	(52) 1,804	(34) 1,929	(38) 2,416	(36) 2,628	(22) 2,882	(13) 2,685	(37) 3,373	(24) 3,646	(33) 3,712	(905) 2,852
Women	(32) 1,641	(13) 1,885	(24) 2,150	(10) 2,320	(5) 2,460	(10) 2,850	(8) 2,463	(8) 2,288	(4) 2,725	(347) 2,171
Master's Degree										
Men		(5) 2,360	(14) 2,429	(17) 2,859	(24) 3,304	(14) 3,207	(14) 3,371	(20) 3,735	(17) 4,071	(427) 3,341
Women		(8) 1,963	(8) 2,338	(7) 2,657	(4) 2,500	(5) 2,380	(1) 3,100	(5) 2,920		(102) 2,558
Doctoral Degree										
Men		(2) 2,100	(30) 2,960	(51) 3,045	(33) 3,512	(47) 3,632	(79) 4,234	(53) 4,264	(42) 4,848	(1,124) 3,970
Women		(1) 3,300	(10) 3,040	(7) 3,314	(5) 3,340	(7) 3,271	(6) 3,300	(3) 3,733	(1) 3,100	(119) 3,446
ENGINEERING										
Bachelor's Degree										
Men	(1,555) 2,476	(1,276) 2,754	(913) 3,112	(475) 3,393	(367) 3,584	(306) 3,678	(477) 4,069	(508) 4,181	(389) 4,315	(18,082) 3,319
Women	(336) 2,379	(240) 2,641	(110) 2,960	(42) 2,998	(25) 3,372	(21) 3,352	(18) 3,206	(11) 3,400	(11) 3,518	(2,068) 2,703
Master's Degree										
Men	(61) 2,718	(227) 2,815	(314) 3,212	(312) 3,447	(307) 3,791	(258) 3,841	(405) 4,226	(389) 4,314	(265) 4,426	(7,847) 3,857
Women	(15) 2,640	(37) 2,768	(46) 3,093	(34) 3,303	(21) 3,452	(17) 3,582	(20) 3,885	(7) 4,214	(7) 3,729	(593) 3,203
Doctoral Degree										
Men	(2) 3,400	(3) 3,433	(67) 3,507	(95) 3,667	(96) 3,870	(110) 3,991	(261) 4,516	(229) 4,706	(99) 4,825	(2,875) 4,335
Women			(4) 3,350	(6) 3,567	(8) 3,650	(8) 3,525	(9) 4,189	(6) 4,200	(3) 4,267	(117) 3,779
MATH & STATISTICS										
Bachelor's Degree										
Men	(12) 2,017	(15) 2,393	(7) 2,786	(3) 3,333	(6) 3,283	(11) 3,109	(8) 3,838	(22) 3,986	(11) 3,836	(302) 3,384
Women	(11) 1,864	(5) 2,200	(4) 3,075	(3) 2,167	(3) 3,400	(5) 2,800	(5) 3,700	(4) 3,750	(3) 2,900	(123) 2,708
Master's Degree										
Men	(2) 2,700	(13) 2,485	(8) 3,025	(8) 2,650	(9) 3,544	(8) 3,325	(26) 4,204	(14) 3,957	(9) 4,344	(271) 3,665
Women	(4) 2,325	(3) 2,403	(3) 2,333	(8) 3,100	(2) 3,100	(3) 2,833	(7) 2,486	(5) 2,760	(1) 2,500	(75) 2,939
PHYSICS										
Bachelor's Degree										
Men	(29) 2,200	(35) 2,514	(20) 2,860	(10) 3,490	(10) 3,210	(11) 3,391	(30) 3,820	(31) 3,942	(23) 4,070	(603) 3,395
Women	(3) 2,167	(4) 2,400	(3) 2,767	(3) 2,700	(4) 2,625		(3) 4,300	(1) 4,100		(53) 2,874

* Total includes all years since first degree. NOTE: Numbers in parenthesis are survey respondents. Blanks indicate no survey respondents.

SOURCE: Battelle Columbus Laboratories, Report on 1986 National Survey of Compensation Paid Scientists and Engineers Engaged in Research and Development Activities, January 1987.

TABLE 63

NUMBER, MEDIAN AND MEAN MONTHLY SALARIES OF NONSUPERVISORY BACHELOR'S LEVEL SCIENTISTS AND ENGINEERS ENGAGED IN R&D BY WORKING-AS-OCCUPATION AND DEGREE OR NON-DEGREE IN WORKING-AS-OCCUPATION, 1986

WORKING-AS-OCCUPATION	DEGREE IN WORKING-AS-OCCUPATION			NON-DEGREE IN WORKING-AS-OCCUPATION		
	Number	Median	Mean	Number	Median	Mean
Physics	483	$3,384	$3,388	168	$3,116	$3,264
Chemistry	1,045	2,511	2,665	206	2,531	2,657
Engineering	16,656	3,043	3,252	3,456	3,124	3,277
Mathematics or Statistics	335	3,209	3,207	88	3,016	3,138
Biological Sciences	319	1,953	2,069	83	2,020	2,141

TABLE 64

NUMBER AND MEAN MONTHLY SALARIES OF SUPERVISORY PROFESSIONALS EMPLOYED IN R&D BY TYPE OF DEGREE AND SELECTED YEARS SINCE DEGREE, 1986

DEGREE	SELECTED YEARS SINCE FIRST DEGREE								
	2	4	7	10	13	15	20-21	24-25	30-31	Total*
Doctor of Veterinary Med.	(3) $3,400	(5) $3,480	(7) $3,543	(6) $3,933	(8) $4,338	(7) $4,567	(10) $5,160	(3) $5,833	(2) $4,050	(135) $4,367
Doctor Dental Surgery		(2) 3,600	(1) 3,700	(1) 3,100	(2) 3,450	(3) 4,300	(2) 4,225	(4) 5,075	(4) 5,475	(78) 4,094
Medical Doctor	(39) 1,682	(33) 2,176	(9) 2,400	(6) 4,000	(11) 3,845	(8) 3,550	(12) 4,275	(14) 5,614	(7) 5,971	(353) 3,130

* Total includes all years since first degree. NOTE: Numbers in parenthesis are survey respondents.

SOURCE: Research & Development Magazine, March 1987

TABLE 65

SALARIES OF SCIENTISTS AND ENGINEERS EMPLOYED IN RESEARCH AND DEVELOPMENT BY PROFESSION, 1986 AND 1987

PROFESSION	MEDIAN SALARY 1987	MEDIAN SALARY 1986	% Increase
Aeronautical Engineer	$50,278	$48,181	4.4
Physicist	48,431	47,426	2.1
Ceramist	47,812	44,285	7.9
Metallurgist	46,625	49,166	-5.2
Mathematician	46,250	44,166	4.7
Chemical Engineer	45,865	44,619	2.8
Geologist	45,714	41,136	11.1
Mechanical Engineer	44,385	41,901	5.9
Electrical Engineer	44,308	43,291	2.4
Chemist	41,860	40,285	3.9
Industrial Engineers	38,889	36,666	6.1
Biologist	38,100	37,013	2.9
ALL PROFESSIONS	**43,224**	**41,449**	**4.3**

TABLE 66

SALARIES OF SCIENTISTS AND ENGINEERS EMPLOYED IN RESEARCH AND DEVELOPMENT BY DEGREE LEVEL, 1986 AND 1987

DEGREE	MEDIAN SALARY 1987	MEDIAN SALARY 1986	% In-crease	ANNUAL DIFFERENCE 1987	ANNUAL DIFFERENCE 1986	Difference Increase %*
Doctorate	$50,396	$45,050	11.8	$6,449	$5,020	28.5
Master's	43,947	40,030	9.8	4,313	4,970	-13.2
Bachelor's	39,634	35,060	13.0	4,986	5,010	-0.5
Less than Bachelors	34,648	30,050	15.3			

* Difference above next-lower degree.

TABLE 67

SALARIES OF SCIENTISTS AND ENGINEERS EMPLOYED IN RESEARCH AND DEVELOPMENT BY TYPE OF EMPLOYER AND SEX, 1986 AND 1987

TYPE OF EMPLOYER AND SEX	1987	1986	% Gain
Industry	$43,877	$40,040	9.6
Men	44,636	40,050	11.4
Women	34,437	30,070	14.5
Government	42,200	40,020	5.4
Men	43,239	40,040	8.0
Women	30,000	30,040	-0.1
Universities	38,621	35,030	10.2
Men	40,521	35,040	15.6
Women	24,318	25,100	-3.1

Source: U.S. Department of Labor, National Survey of Professional, Administrative, Technical and Clerical Pay, March 1986.

TABLE 68

NUMBER AND AVERAGE SALARIES FOR SELECTED PROFESSIONAL, ADMINISTRATIVE, TECHNICAL AND CLERICAL OCCUPATIONS IN PRIVATE INDUSTRY, MARCH 1986

OCCUPATION AND CLASS	NO. OF EMPLOYEES	MONTHLY SALARIES		ANNUAL SALARIES	
		MEAN	MEDIAN	MEAN	MEDIAN
Accountants I	12,703	$1,760	$1,749	$21,117	$20,992
Accountants II	26,629	2,140	2,093	25,676	25,115
Accountants III	40,781	2,598	2,541	31,176	30,488
Accountants IV	21,228	3,290	3,250	39,481	38,997
Accountants V	7,633	4,101	4,015	49,216	48,181
Chief Accountants II	1,293	3,991	4,000	47,894	48,000
Chief Accountants III	372	5,153	5,025	61,833	60,296
Chemists I	3,260	1,869	1,845	22,426	22,145
Chemists II	6,042	2,272	2,250	27,260	27,000
Chemists III	8,862	2,863	2,816	34,353	33,786
Chemists IV	7,774	3,470	3,450	41,642	41,400
Chemists V	6,033	4,226	4,198	50,711	50,380
Chemists VI	2,995	5,078	5,091	60,931	61,093
Chemists VII	702	6,259	6,099	75,110	73,192
Engineers I	37,755	2,323	2,365	27,875	28,381
Engineers II	64,658	2,607	2,604	31,283	31,247
Engineers III	129,153	2,981	2,962	35,771	35,542
Engineers IV	143,389	3,560	3,539	42,724	42,463
Engineers V	105,902	4,231	4,204	50,776	50,448
Engineers VI	50,285	4,908	4,881	58,893	48,570
Engineers VII	13,036	5,716	5,650	68,586	67,800
Engineers VIII	2,897	6,584	6,545	70,008	78,540
Engineering Technicians I	5,323	1,415	1,387	16,975	16,639
Engineering Technicians II	16,096	1,696	1,669	20,355	20,033
Engineering Technicians III	30,383	1,992	1,974	23,901	23,688
Engineering Technicians IV	33,193	2,374	2,353	28,488	28,234
Engineering Technicians V	18,516	2,731	2,707	32,778	32,778
Attorneys I	1,312	2,588	2,532	31,055	30,386
Attorneys II	3,133	3,304	3,250	39,645	39,000
Attorneys III	4,255	4,183	4,082	50,195	48,980
Attorneys IV	3,318	5,350	5,315	64,197	63,774
Clerk, Accounting II	119,122	1,234	1,192	14,814	14,304
Clerk, Accounting III	70,880	1,502	1,462	18,030	17,543
Secretaries II	65,550	1,529	1,490	18,342	17,880
Secretaries III	103,559	1,768	1,710	21,211	20,520
Drafters I	2,501	1,094	1,083	13,130	12,999
Drafters II	10,155	1,335	1,317	16,020	15,807
Drafters III	22,943	1,706	1,695	20,475	20,341
Drafters IV	22,120	2,063	2,045	24,759	24,542
Drafters V	13,435	2,598	2,548	31,170	30,574
Computer Operators I	9,711	1,164	1,141	13,966	13,687
Computer Operators II	34,365	1,446	1,416	17,351	16,993
Computer Operators III	23,410	1,807	1,766	21,688	21,192
Computer Operators IV	7,678	2,050	2,022	24,597	24,264
Computer Operators V	1,237	2,515	2,428	28,983	29,138
Computer Programmers I	14,685	1,751	1,750	21,017	21,000
Computer Programmers II	35,544	2,054	2,042	24,643	24,501
Computer Programmers III	35,544	2,054	2,042	24,643	24,501
Computer Programmers IV	20,744	2,914	2,906	34,966	34,870
Computer Programmers V	9,268	3,588	3,620	43,055	43,440
Systems Analysts I	20,287	2,432	2,405	29,178	28,860
Systems Analysts II	45,294	2,915	2,916	34,986	34,986
Systems Analysts III	37,403	3,505	3,457	42,066	41,483
Systems Analysts IV	15,077	4,122	4,032	49,464	48,381
Systems Analysts V	2,512	4,870	4,831	58,443	57,977

SOURCE: U.S. Department of Labor, "WhiteCollar Salaries Varied Widely in Service Industries in March 1987," USDL 87-44, February 4, 1987

TABLE 69

NUMBER AND AVERAGE SALARIES FOR SELECTED PROFESSIONAL, ADMINISTRATIVE, TECHNICAL & CLERICAL OCCUPATIONS IN THE PRIVATE SERVICES INDUSTRY, MARCH 1987

OCCUPATION AND CLASS	NUMBER OF OF EMPLOYEES*	AVERAGE ANNUAL SALARIES
Accountants I	2,644	$19,588
Accountants II	7,056	23,426
Accountants III	7,129	29,791
Accountants IV	3,227	38,707
Accountants V	808	49,291
Public Accountants II	14,443	23,044
Public Accountants III	15,563	27,537
Engineers I	7,321	26,355
Engineers II	14,392	30,151
Engineers III	21,903	35,779
Engineers IV	27,115	42,964
Engineers V	21,285	50,597
Engineers VI	10,573	59,422
Engineers VII	3,251	67,183
Engineers VIII	933	78,049
Engineering Technicians II	2,253	20,149
Engineering Technicians III	3,034	24,425
Engineering Technicians IV	3,428	30,009
Engineering Technicians V	2,535	34,275
Attorneys II	186	41,370
Attorneys III	458	53,100
Attorneys IV	586	63,711
Clerk, Accounting II	33,476	14,424
Clerk, Accounting III	20,392	16,739
Secretaries II	31,190	18,309
Secretaries III	26,195	20,644
Drafters I	1,848	12,450
Drafters II	4,223	15,898
Drafters III	6,582	20,742
Drafters IV	7,128	25,281
Drafters V	2,023	31,634
Computer Operators I	2,616	14,067
Computer Operators II	12,000	16,812
Computer Operators III	6,790	21,020
Computer Operators IV	2,191	24,673
Computer Programmers I	5,385	20,980
Computer Programmers II	13,587	23,883
Computer Programmers III	15,102	29,435
Computer Programmers IV	6,594	36,204
Computer Programmers V	1,849	43,292
Systems Analysts I	5,04[illegible]	28,607
Systems Analysts II	15,[illegible]	35,386
Systems Analysts III	9,4[illegible]	42,687
Systems Analysts IV	4,066	50,658
Systems Analysts V	749	59,841

*Occupational Employment estimates relate to the total in-all establishments within scope of the survey and not the number actually surveyed.

SOURCE: American Chemical Society, Chemical and Engineering News, Vol. 63, Number 27, July 8, 1985, p. 32; Vol. 65, No. 26, June 29, 1987, p. 33; Salaries 1986, July 1986 and 1987 Salaries of Non-Academic Chemical Engineers, July 1987

TABLE 70

MEDIAN ANNUAL SALARIES FOR CHEMISTS* AND CHEMICAL ENGINEERS* OF ALL EXPERIENCE LEVELS BY DEGREE, 1973 - 1987

YEAR	CHEMISTS			CHEMICAL ENGINEERS		
	B.S.	M.S.	Ph.D.	B.S.	M.S.	Ph.D.
1973	$16,800	$17,500	$20,500	$20,200	$22,000	$23,100
1974	17,500	18,400	21,700	21,300	22,400	24,800
1975	19,000	19,800	23,000	24,000	25,000	26,000
1976	19,800	20,500	24,700	26,000	27,000	29,000
1977	21,000	22,000	26,000	28,000	30,000	30,000
1978	22,000	24,000	27,400	30,000	32,000	32,000
1979	23,500	25,000	29,000	31,700	31,500	35,000
1980	25,000	26,000	31,200	35,000	35,000	38,000
1981	27,500	30,000	35,000	36,000	40,000	42,000
1982	28,500	31,600	37,500	40,000	42,000	45,000
1983	30,000	33,000	40,000	40,000	41,900	48,500
1984	30,900	34,000	42,000	39,995	46,000	54,700
1985	32,000	36,000	44,000	38,200	41,050	55,900
1986	33,000	37,900	47,800	43,900	48,000	59,400
1987	33,500	39,000	47,700	47,100	51,000	61,000

* Includes only members of the American Chemical Society.

CHART 1

TRENDS IN MEDIAN ANNUAL SALARIES OF CHEMISTS IN CURRENT DOLLARS, BY DEGREE LEVEL, 1977-1987

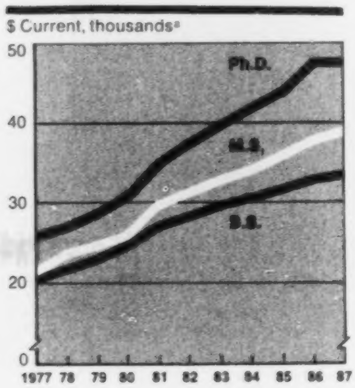
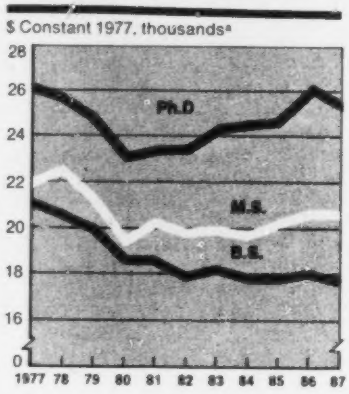


CHART 2

TRENDS IN MEDIAN ANNUAL SALARIES OF CHEMISTS IN CONSTANT 1967 DOLLARS, BY DEGREE LEVEL, 1977-1987



SOURCE: American Chemical Society, 1987 Salaries of Non-Academic Chemists: Analysis of the American Chemical Society's 1987 Survey of Salaries and Employment, July 1987; and Chemical and Engineering News, Vol. 62, No. 26, June 29, 1987

TABLE 71

MEDIAN SALARIES OF CHEMISTS* EMPLOYED FULL-TIME IN INDUSTRY BY HIGHEST DEGREE, SEX AND YEARS SINCE B.S., 1987

YEARS SINCE B. S.	BACHELOR'S		MASTER'S		Ph. D.	
	Men	Women	Men	Women	Men	Women
0-1	$23,500	$	$	$	$	$
2-4	26,000	24,350	32,000			
5-9	30,800	30,000	33,000	31,550	41,000	40,000
10-14	34,850	33,700	38,000	38,000	45,360	44,600
15-19	40,868	32,000	43,850	40,085	52,000	53,250
20-24	47,500	38,700	45,000		59,000	47,000
25-29	46,780		51,152		63,120	
30-34	49,050		51,000		64,000	
35-39	50,000		54,900		66,900	
> = 40	43,200		56,000		65,450	
All Years	36,400	30,000	42,500	35,017	53,000	44,760

* Includes only members of the American Chemical Society.

Note: Blanks indicate less than five respondents.

TABLE 72

MEDIAN ANNUAL SALARIES OF CHEMISTS* BY TYPE OF EMPLOYER, DEGREE LEVEL AND SEX, 1987

TYPE OF EMPLOYER	DEGREE LEVEL AND SEX								
	BACHELOR'S			MASTER'S			Ph. D.'s		
	Men	Women	Total	Men	Women	Total	Men	Women	Total
Private Industry	$39,400	$34,300	$37,400	$45,400	$39,700	$43,800	$56,400	$49,200	$55,700
Government	36,500	30,600	34,500	36,800	33,700	35,900	50,900	41,800	50,200
Academic	26,600	22,300	24,400	31,900	27,400	29,900	42,300	36,100	41,300
Other Non-Academic	36,900	28,400	33,600	46,700	35,900	42,000	54,500	50,200	53,500

* Includes only members of the American Chemical Society

SOURCE: American Chemical Society, 1987 Salaries of Non-Academic Chemists: Analysis of the American Chemical Society's 1987 Survey of Salaries and Employment, July 1987.

TABLE 73

MEDIAN AND MEAN SALARIES OF EMPLOYED FULL-TIME CHEMISTS* IN INDUSTRY BY TYPE OF INDUSTRY AND DEGREE LEVEL, 1987

TYPE OF INDUSTRY	BACHELOR'S		MASTER'S		Ph. D.	
	Median	Mean	Median	Mean	Median	Mean
Agricultural Chemicals	$32,200	$34,052	$43,151	$43,710	$52,320	$54,333
Biochemical Prod.			34,000	35,744	51,650	57,248
Basic Chemicals	38,404	38,404	43,704	46,584	53,760	58,056
Specialty Chem.	35,000	39,696	43,080	46,591	50,150	53,572
Coatings & Paints	36,000	41,624	41,832	42,956	50,200	52,160
Electronics	38,000	38,426	46,000	51,176	53,000	55,148
Food	32,150	35,382	42,300	46,428	55,000	58,924
Petroleum & Natural Gas	42,000	45,092	48,500	49,389	59,000	63,624
Pharmaceuticals	32,350	34,598	38,000	41,257	52,000	55,974
Plastics	38,854	39,534	46,250	46,734	53,000	58,210
Rubber	44,000	45,139	48,000	48,727	55,000	57,828
Metals & Minerals	36,475	39,974	38,000	37,149	45,000	46,921
Other Manufacturers	35,463	37,590	41,000	43,758	53,000	55,551
Non-Manufacturing	29,200	32,440	37,401	40,424	48,400	50,768

* Includes only members of the American Chemical Society.

TABLE 74

MEDIAN AND MEAN SALARIES OF EMPLOYED FULL-TIME CHEMISTS* IN INDUSTRY BY WORK FUNCTION AND DEGREE LEVEL, 1987

WORK FUNCTION	BACHELOR'S		MASTER'S		Ph. D.	
	Median	Mean	Median	Mean	Median	Mean
Management R&D	$50,500	$51,325	$55,000	$57,055	$65,000	$67,891
Basic Research	28,000	30,032	36,000	37,813	48,000	51,390
Applied Research	33,072	35,529	40,622	41,561	49,000	51,018
General Management	44,978	49,645	48,450	57,986	63,500	65,605
Marketing	42,100	43,617			52,000	53,673
Production & Quality Control	31,000	32,428	35,550	37,680	46,113	50,596
Forensics	30,000	30,535	30,950	31,706	48,000	49,822
Chemistry Info.	35,000	36,901	37,700	40,071		
Consulting	29,000	39,052	32,000	39,547	50,000	53,779
Other	35,800**	37,773**	37,960	42,784	55,750	57,022

* Includes only members of the American Chemical Society.
**Includes Writing and Computer Programming.

SOURCE; American Chemical Society, 1987 Salaries of Non-Academic Chemists: Analysis of the American Chemical Society's 1987 Survey of Salaries and Employment, July 1987

TABLE 75

MEDIAN AND MEAN SALARIES OF EMPLOYED FULL-TIME CHEMISTS* IN INDUSTRY BY TYPE OF WORK SPECIALTY AND DEGREE LEVEL, 1987

TYPE OF SPECIALTY	BACHELOR'S		MASTER'S		Ph. D.	
	Median	Mean	Median	Mean	Median	Mean
Biochemistry	$28,725	$32,251	$36,750	$40,274	$50,000	$54,886
General Chem.	37,000	38,624	41,620	45,651	59,605	62,060
Analytical Chem.	34,179	32,207	38,000	40,217	50,000	52,311
Inorganic Chem.	36,000	39,819	48,850	52,431	49,800	53,165
Organic Chem.	35,340	40,631	40,000	44,059	52,000	55,136
Polymer Chem.	40,250	42,534	46,000	46,960	53,000	56,471
Medicinal/Pharmaceutical Chemistry	32,600	34,082	39,500	42,142	52,160	57,544
Clinical Chem.	36,000	36,489			54,000	60,953
Environmental Chem.	31,000	34,043	43,399	39,500	52,000	53,222
Agricultural/Food Chemistry	32,261	38,512	42,450	45,540	52,600	56,283
Physical Chemistry	35,000	44,130			56,000	58,274
Other Chem. Sciences	39,915	37,000	44,650**	45,790**	54,000	58,131
Materials Science	38,900	41,968	45,000	46,931	55,000	59,815

* Includes only members of the American Chemical Society.

**Includes Clinical Chemistry.

Note: Blanks indicate insufficient data.

TABLE 76

MEDIAN AND MEAN SALARIES OF FULL-TIME EMPLOYED CHEMISTS* IN PRIVATE INDUSTRY BY GEOGRAPHICAL REGION AND DEGREE LEVEL, 1987

GEOGRAPHIC REGION	BACHELOR'S		MASTER'S		Ph. D.	
	Median	Mean	Median	Mean	Median	Mean
Pacific	$37,000	$39,748	$42,000	$42,556	$54,248	$57,149
Mountain	35,500	34,556	38,000	39,233	47,632	47,204
West North Central	30,000	32,835	37,568	39,598	50,000	54,357
West South Central	35,000	40,073	43,500	46,273	54,200	58,042
East North Central	33,000	35,926	39,500	43,276	52,320	55,824
East South Central	34,300	33,879	46,514	46,907	49,174	51,731
Middle Atlantic	36,000	38,762	42,240	44,990	53,000	56,189
South Atlantic	35,800	37,020	41,200	43,402	51,600	54,070
New England	33,900	40,511	41,568	45,882	54,000	57,882

* Includes only members of the American Chemical Society.

SOURCE: American Chemical Society, 1987 Salaries of Non-Academic Chemists: Analysis of the American Chemical Society's 1987 Survey of Salaries and Employment, July 1987.

TABLE 77

1986 MEDIAN AND MEAN SALARIES OF NON-ACADEMIC CHEMISTS* BY DEGREE LEVEL AND SELECTED STATES, 1987

SELECTED STATES	BACHELOR'S		MASTER'S		Ph. D.	
	Median	Mean	Median	Mean	Median	Mean
Arizona	$31,600	$33,993	$	$	$	$
California	37,000	39,939	40,922	42,633	53,000	56,707
Colorado	32,000	33,317				
Connecticut	38,350	45,301	41,736	46,125	56,375	63,215
Delaware			41,000	44,085	54,500	58,508
Florida	30,050	34,291	46,460	46,466	42,000	45,998
Georgia	34,800	35,196			52,000	54,157
Illinois	31,900	35,295	39,400	43,426	52,000	57,415
Indiana	32,500	33,934	35,850	38,618	56,000	60,787
Louisiana	32,500	36,756			52,600	54,927
Massachusetts	33,430	35,902	48,000	46,570	53,500	55,434
Maryland	40,400	41,176			47,800	51,079
Michigan	32,000	33,720	37,404	40,647	50,000	54,489
Minnesota	28,500	32,650	37,920	41,099	51,490	53,837
Missouri	31,200	34,061	37,950	41,269	47,700	53,046
North Carolina	33,750	36,204	41,000	39,706	50,000	53,521
New Jersey	39,025	41,298	44,000	45,186	55,000	58,863
New York	34,528	36,668	44,600	47,231	52,000	56,098
Ohio	35,900	38,642	43,800	45,386	52,000	53,345
Oklahoma					60,000	62,299
Pennsylvania	35,800	37,695	37,500	39,723	51,600	54,186
South Carolina	38,000	37,608			51,540	52,172
Tennessee	38,200	35,734			47,000	51,775
Texas	35,000	41,316	45,100	48,342	52,988	56,890
Virginia	37,050	37,726			52,000	54,196
West Virginia					50,000	50,596
Wisconsin	32,000	35,969				

* Includes only members of the American Chemical Society.

SOURCE: American Chemical Society, 1987 Salaries of Non-Academic Chemists: Analysis of the American Chemical Society's 1987 Survey of Salaries and Employment, July 1987.

TABLE 78

MEDIAN AND MEAN SALARIES OF NON-ACADEMIC CHEMISTS* BY DEGREE LEVEL AND SELECTED METROPOLITAN AREAS, 1987

SELECTED METRO AREAS	BACHELOR'S		MASTER'S		Ph.D.	
	Median	Mean	Median	Mean	Median	Mean
Atlanta	$34,500	$35,766	$	$	$	$
Baltimore	43,000	40,550				
Boston	35,000	37,893	48,000	47,973	47,500	52,944
Chicago	31,000	33,776	40,000	44,691	52,000	57,842
Cincinnati	34,600	38,077	34,750	42,578	48,500	53,644
Cleveland-Akron	35,000	36,346	49,500	48,984	52,460	52,898
Columbus	32,000	36,595				
Dallas					60,000	61,480
Detroit	36,000	39,333	42,000	43,064	50,000	54,837
Houston-Beaumont	42,500	46,011	43,500	47,957	54,000	58,958
Los Angeles	38,000	40,453	39,750	41,760	54,090	58,858
Newark	39,000	41,493	44,000	44,195	55,000	58,987
New York	36,000	40,008			51,500	52,385
Philadelphia	34,700	36,600	43,500	45,234	50,960	52,941
Pittsburgh	39,555	41,194	37,971	38,123	51,600	55,788
St. Louis	33,000	35,443			49,450	52,165
San Francisco	35,483	38,502	43,800	45,899	54,658	57,177
Washington, DC					47,400	49,686

* Inlcudes only members of the American Chemical Society.

NOTE: Blanks indicate fewer than 15 respondents.

SOURCE; Industrial Chemical News, November, 1986; and Personal Communication from David Rotman, ICN.

TABLE 79

NUMBER AND AVERAGE SALARIES OF CHEMISTS BY SELECTED EMPLOYERS, 1986

Employment Sector	No.	Average Salary	% Who Work In Area
Academic	52	$40,721	4.2
Consulting or Research	222	43,576	17.9
Government	134	37,683	10.8
Manufacturing	768	42,397	62.0
Self-Employed	11	63,591	0.9
Other	57	42,313	4.6

TABLE 80

NUMBER AND AVERAGE SALARIES OF CHEMISTS BY CHEMICAL SPECIALTY, 1986

Chemical Specialty	No.	Average Salary	% Who Work In Area
Agricultural	30	$40,417	2.4
Analytical	423	38,173	34.1
Biochemical	68	41,931	5.5
Environmental	81	35,753	6.5
Inorganic	92	44,944	7.4
Organic	223	45,791	18.0
Physical	49	48,857	4.0
Polymer	198	44,171	16.0

TABLE 81

NUMBER AND AVERAGE SALARIES OF INDUSTRIAL CHEMISTS BY NUMBER OF PEOPLE SUPERVISED

No. of People Supervised	No.	Average Salary	% Who Supervise
0	394	$35,566	31.8
1 - 5	591	42,304	47.7
6 - 20	191	49,767	15.4
21 - 50	38	59,662	3.1
More than 50	20	69,100	1.6

SOURCE; Industrial Chemical News, November, 1986; and Personal Communication from David Rotman, ICN.

TABLE 82

NUMBER AND AVERAGE SALARIES OF CHEMISTS BY WORK FUNCTION, 1986

Work Function	No.	Average Salary	% Who Work In Area
Analysis	238	$35,513	19.2
Administration	110	50,459	8.9
Applied R&D	397	45,623	32.0
Basic Research	131	41,846	10.6
Consulting	32	42,516	2.6
Quality Control	140	33,414	11.3
New Product Development	160	41,866	12.9
Process Design & Control	28	41,000	2.3

TABLE 83

NUMBER AND AVERAGE SALARIES OF CHEMISTS BY GEOGRAPHIC REGION, 1986

Geographic Region	No.	Average Salary	% Who Work In Area
East North Central	295	$41,476	23.8
East South Central	36	40,764	2.9
Middle Atlantic	299	42,910	24.1
Mountain	46	41,859	3.7
New England	107	43,259	8.6
Pacific	116	43,602	9.4
South Atlantic	171	41,262	13.8
West North Central	76	41,640	6.1

SOURCE: American Institute of Chemists, The Chemist, May 1987.

TABLE 84

MEDIAN ANNUAL SALARY OF MEMBERS OF THE AIC* BY DEGREE LEVEL AND SEX, 1986

DEGREE LEVEL	B. S.	M. S.	Ph. D.
Male	$39,000	41,000	50,000
Female	28,000	34,000	41,636
Overall	36,000	41,636	50,000

*American Institute of Chemists.

SOURCE: American Institute of Chemists, The Chemist, May 1987.

TABLE 85

MEDIAN ANNUAL SALARY OF MEMBERS OF THE AIC* BY TYPE OF EMPLOYER AND DEGREE, 1986

TYPE OF EMPLOYER	B. S.	M. S.	Ph. D.	% in Category
Industry	$40,000	$43,900	$57,600	46.2
Academia	20,000	28,000	45,000	21.2
Non-Profits		46,000	54,360	2.4
Government	33,364	40,051	53,000	12.3
Self-Employed	35,000	35,000	40,500	11.7
Other	31,000		52,000	6.2
Total Salary	36,000	41,636	50,000	
Total Income	39,000	44,000	55,300	

*American Institute of Chemists.

TABLE 86

MEDIAN ANNUAL SALARY OF MEMBERS OF THE AIC* BY DEGREE LEVEL AND SPECIALTY, 1986

DEGREE SPECIALTY	B. S.	M. S.	Ph. D.	% in Category
Analytical	$33,000	$35,000	$40,000	20.8
Biochemistry	28,000	34,000	50,000	10.2
Inorganic	38,600	40,000	50,000	5.9
Organic	39,800	40,000	49,500	14.3
Physical		48,000	50,000	8.7
Polymer	42,000	45,000	60,000	9.3
Chemical Engineering	42,000	45,000	59,600	8.1
Other	37,500	45,500	57,458	22.7

*American Institute of Chemists.

TABLE 87

MEDIAN ANNUAL SALARY OF MEMBERS OF THE AIC* BY WORK FUNCTION AND DEGREE LEVEL, 1986

WORK FUNCTION	B. S.	M. S.	Ph. D.	% in Category
Research & Development	$32,000	$40,700	$50,000	34.2
Management	48,000	49,500	65,000	21.7
Consulting	35,000	43,200	46,400	11.4
Teaching		29,325	42,000	11.3
Marketing, Services	32,500	35,000	55,000	9.3
Other, Retired	29,413	28,500	49,000	12.2

*American Institute of Chemists.

SOURCE: American Institute of Chemists, The Chemist, May 1987.

TABLE 88

MEDIAN ANNUAL SALARY OF MEMBERS OF THE AIC* BY GEOGRAPHICAL REGION AND DEGREE LEVEL, 1986

GEOGRAPHICAL REGION	B. S.	M. S.	Ph. D.	% in Category
Pacific	$41,000	$45,600	$50,000	9.4
Mountain	29,862		50,000	4.0
West North Central	40,000	30,650	46,390	4.4
East North Central	37,170	40,000	49,000	16.8
West South Central	33,000	36,000	50,700	8.0
East South Central	38,000		50,000	4.0
Middle Atlantic	36,000	45,000	55,000	25.9
South Atlantic	36,000	37,000	50,000	20.5
New England	35,000	41,500	49,600	7.1

*American Institute of Chemists.

Source: American Mathematical Society, NOTICES, Vol. 33, No. 7, November 1986.

TABLE 89

MEDIAN SALARIES IN MATHEMATICS FOR PH.D.'S WITH ONE YEAR OF EXPERINCE BY TYPE OF EMPLOYER AND SEX, 1986

TYPE OF EMPLOYER	MEN	WOMEN
Teaching or Teaching & Research		
9 Months	$27,000	$27,000
12 Months	30,500	28,500
Research		
9 Months	25,000	24,000
12 Months	30,000	
Business & Industry (12 Months)	42,000	36,000
Government (12 Months)	32,500	

SOURCE: American Geological Institute, Summary: North American Survey of Geoscientists, 1987.

TABLE 90

MEDIAN ANNUAL INCOME OF EMPLOYED GEOSCIENTISTS BY TYPE OF EMPLOYER, 1986

TYPE OF EMPLOYER	Salary
Independent Petroleum Companies	$63,000
Major Integrated Oil Companies	55,000
Minerals Industry Consulting	35,000
Banking, Law, Journalism	63,000
Local Government Secondary Education	25,000

SOURCE: American Psychological Association, Salaries in Psychology, 1985, August 1985

TABLE 91

MEDIAN SALARIES OF PSYCHOLOGISTS BY TYPE OF POSITION AND DEGREE LEVEL, 1985

TYPE OF POSITION	DOCTORAL LEVEL	MASTER'S LEVEL
Faculty Position*	$32,000	$26,000
Educational Administration	44,000	37,889
Research Positions	40,000	31,500
Administration of Research	52,000	46,000
Direct Human Services (Clinical)	40,000	27,500
Direct Human Services (Counseling)	34,000	29,667
Direct Human Services (School)*	30,000	27,818
Direct Human Services (Other Psychology)	38,000	26,000
Administration of Human Services	40,000	33,000
Applied Psychology (Industrial/ Organizational)	52,000	40,000
Applied Psychology	44,000	38,000
Administration of Applied Psychology	51,667	42,000
Other Administrative Positions	49,000	47,500
Other Types of Positions	48,444	40,000

*These salaries are on a 9 to 10 month basis; all other salaries are on a 11 to 12 month basis.

SOURCE: American Psychological Association, Salaries in Psychology, 1985, August 1985.

TABLE 92

MEDIAN AND MEAN SALARIES OF DOCTORAL-LEVEL PSYCHOLOGISTS+ ON 11-12 MONTH BASIS BY TYPE OF POSITION AND YEARS OF WORK EXPERIENCE, 1985

TYPE OF POSITION	YEARS OF WORK EXPERIENCE							
	0-1	2-4	5-9	10-14	15-19	20-24	25-29	30+
EDUCATIONAL ADMINISTRATION								
Median	$	$29,500	$32,000	$37,000	$47,000	$47,000	$54,000	$50,500
Mean		29,444	34,217	37,411	46,852	47,604	54,711	52,530
RESEARCH								
Median	23,000	29,000	35,500	40,000	40,500	50,500	55,000	60,000
Mean	29,000	29,155	37,322	41,102	48,242	52,466	55,179	60,413
RESEARCH ADMINISTRATION								
Median		29,500	42,500	45,611	52,000	64,000	59,000	67,000
Mean		31,300	45,139	47,436	53,951	64,930	59,721	67,083
DIRECT HUMAN SERVICES (Clinical Psychology)								
Median	27,000	30,000	38,000	44,000	49,000	47,500	47,000	48,000
Mean	28,164	33,611	43,801	49,906	53,610	52,794	52,284	54,019
DIRECT HUMAN SERVICES (Counseling Psychology)								
Median	26,000	27,500	31,500	35,000	36,000	40,778	45,222	49,000
Mean	27,286	28,943	35,428	41,907	41,981	42,029	48,419	51,011
DIRECT HUMAN SERVICES* (School Psychology)								
Median		24,000	25,364	30,000	34,273	33,273	36,500	32,727
Mean		24,198	26,226	30,987	34,647	34,542	36,083	34,197
DIRECT HUMAN SERVICES (Other Psychology)								
Median		30,500	32,000	41,778	37,000	39,000	54,500	62,500
Mean		31,460	37,923	47,479	39,588	46,086	62,256	63,333
ADMINISTRATION OF HUMAN SERVICES								
Median		31,000	36,000	40,000	43,000	44,000	46,000	47,500
Mean		32,622	37,421	40,347	45,629	46,167	50,145	49,405
APPLIED PSYCHOLOGY (Industrial/Org. Psych)								
Median		37,000	45,000	59,500	64,000	67,500	72,000	75,000
Mean		39,171	49,315	61,403	64,667	64,705	69,800	71,514
APPLIED PSYCHOLOGY (Other Psychology)								
Median		39,000	40,000	44,000	54,000	43,000	54,000	60,000
Mean		39,248	43,175	45,625	56,905	51,185	50,300	58,765
ADMINISTRATION OF APPLIED PSYCHOLOGY								
Median		35,000	44,000	46,000	56,500	58,000	66,000	64,278
Mean		34,214	48,825	48,909	59,785	66,473	66,783	69,292
OTHER ADMINISTRATIVE								
Median		38,000	42,000	45,000	48,000	50,000	61,000	60,000
Mean		35,923	43,316	51,475	54,745	49,231	62,756	63,933
OTHER								
Median		29,000	40,500	53,000	50,000	60,000	60,000	64,000
Mean		30,795	45,727	55,556	55,242	64,543	55,909	61,789

+Members of the American Psychological Association. *9-10 Month Salaries.

NOTE: Blanks indicate fewer than 5 respondents.

SOURCE: American Psychological Association, Salaries in Psychology, 1985, August 1985.

TABLE 93

MEDIAN AND MEAN SALARIES OF MASTERS-LEVEL PSYCHOLOGISTS+ ON 11-12 MONTH BASIS BY TYPE OF POSITION AND YEARS OF WORK EXPERIENCE, 1985

TYPE OF POSITION	YEARS OF WORK EXPERIENCE						
	2-4	5-9	10-14	15-19	20-24	25-29	30+
EDUCATIONAL ADMINISTRATION							
Median	$	$30,000	$36,667	$39,500	$44,000	$38,000	$47,000
Mean		30,200	36,873	38,130	42,315	43,400	46,333
RESEARCH							
Median	23,500	29,000	31,000		51,500		
Mean	23,583	30,000	31,800		52,333		
RESEARCH ADMINISTRATION							
Median		38,000				53,000	
Mean		36,600				53,400	
DIRECT HUMAN SERVICES (Clinical Psychology)							
Median	21,000	25,000	30,000	30,500	29,000	32,000	35,000
Mean	22,684	27,291	32,267	31,800	45,111	37,083	39,469
DIRECT HUMAN SERVICES (Counseling Psychology)							
Median		22,500	35,000	34,000			
Mean		22,643	36,191	43,857			
DIRECT HUMAN SERVICES* (School Psychology)							
Median	20,500	22,000	27,000	30,636	30,000	33,000	31,364
Mean	22,591	23,439	27,633	30,058	30,758	32,409	31,403
DIRECT HUMAN SERVICES (Other Psychology)							
Median	23,000	25,500	29,000	25,000			
Mean	23,143	26,500	30,948	34,857			
ADMINISTRATION OF HUMAN SERVICES							
Median	23,000	24,500	32,000	34,000	39,500	40,000	45,000
Mean	26,800	25,630	33,852	32,688	41,667	46,800	47,058
APPLIED PSYCHOLOGY (Industrial/Org. Psych)							
Median	31,500	34,500	33,500	45,000		48,000	45,000
Mean	32,200	34,917	34,667	46,889		52,778	49,667
APPLIED PSYCHOLOGY (Other Psychology)							
Median						46,000	
Mean						42,905	
ADMINISTRATION OF APPLIED PSYCHOLOGY							
Median		33,500	37,500	48,000	45,000	60,000	51,500
Mean		33,875	37,333	45,600	50,833	65,000	57,500
OTHER ADMINISTRATIVE							
Median		35,000	37,000	36,000	53,000	60,000	69,500
Mean		35,033	41,200	40,250	56,571	59,000	67,214
OTHER							
Median			29,000	60,000		46,400	
Mean			34,328	63,185		46,844	

+Members of the American Psychological Association. *9-10 Month Salaries.

NOTE: Blanks indicate salaries not provided for those positions with fewer than 5 respondents.

Source: American Institute of Physics, Unpublished data.

TABLE 94

1985 MEDIAN AND MEAN SALARIES OF PHYSICISTS* BY YEARS SINCE DEGREE TYPE OF EMPLOYER AND DEGREE LEVEL

TYPE OF EMPLOYER & DEGREE LEVEL	YEARS SINCE DEGREE						
	0-4	5-9	10-14	15-19	20-24	20+	25+
INDUSTRY							
Ph.Ds.							
Median	$42,800	$49,400	$54,500	$60,000	$63,000	$	$65,700
Mean	43,600	50,100	56,000	64,000	66,100		72,300
MASTER'S							
Median	35,600	40,000	50,000	55,000		55,000	
Mean	37,500	42,100	52,300	59,600		59,500	
BACHELOR'S							
Median	31,000	39,200	38,500	45,300		50,600	
Mean	31,900	39,900	40,800	50,500		56,700	67,800
GOVERNMENT							
Ph.Ds.							
Median	40,000	41,600	47,500	53,300	57,000		
Mean	41,000	42,800	48,700	53,300	57,500		63,400
UNIVERSITY 11-12 Month							
Ph.Ds.							
Median	30,000	36,000	43,000	50,000	54,400		59,000
Mean	31,400	37,100	45,300	52,100	55,500		61,100
UNIVERSITY 9-10 Month							
Ph.Ds.							
Median	26,000	29,000	33,000	37,000	42,800		49,100
Mean	27,300	30,900	34,000	38,800	44,200		49,800
SECONDARY SCHOOL							
MASTER'S							
Median	24,500	28,800	28,000	31,000		30,000	
Mean	23,700	27,500	28,600	31,400		28,700	
FFR&DC**							
Ph.Ds							
Median	39,400	45,000	50,700	54,000	56,000		60,000
Mean	40,200	45,100	51,600	55,700	59,400		62,200

*Members of the AIP Member Societies **Federally funded R & D Centers

SOURCE: American Institute of Physics, Unpublished data.

TABLE 95

1985 SALARIES OF PHYSICISTS* BY TYPE OF EMPLOYER AND DEGREE LEVEL

EMPLOYER	Ph.Ds.			MASTER'S		
	NO.	MEDIAN	MEAN	NO.	MEDIAN	MEAN
University						
9-10 month	826	$39,000	$41,100		$	$
11-12 month	545	42,600	43,800			
4-Year College						
9-10 month	151	30,000	31,100			
Junior College				54	32,100	32,300
Industry/Self-Employed	1,045	52,600	57,000	341	48,900	51,200
Government	350	51,000	51,400	88	44,900	45,900
FFR&DC**	427	50,600	51,900	36	42,500	42,500
Secondary School				131	30,000	28,700
Nonprofit	86	48,000	49,600			
Hospital	47	52,100	55,100	49	40,000	43,500

*Includes only members of the AIP member societies.
**Federally-funded research and development centers.

TABLE 96

1985 SALARIES OF INDUSTRIAL PHYSICISTS* BY YEARS SINCE DEGREE AND PRIMARY WORK ACTIVITY

PRIMARY WORK ACTIVITY	YEARS SINCE DEGREE				
	0-4	5-9	10-14	15-19	20+
Basic Research					
Median	$42,000	$50,700	$55,000	$	$67,000
Mean	42,900	50,400	55,800		72,900
Applied Research					
Median	42,400	48,000	54,000	55,000	63,000
Mean	42,600	48,900	55,400	58,600	65,800
Development					
Median	42,900	48,800	53,400	58,000	56,000
Mean	43,500	49,300	54,300	68,100	58,300
Design/Engineering					
Median	42,300	48,000	55,000		63,000
Mean	42,900	47,600	56,400		59,900
Administration					
Median				71,600	86,000
Mean				72,400	89,600

*Members of the AIP Member Societies.
NOTE: Blanks indicate too few respondents to calculate reliable medians/means.

Source: American Institute of Physics, Unpublished data.

TABLE 97

1985 SALARIES OF PH.D. PHYSICISTS* BY YEAR SINCE PH.D.

YEARS SINCE PH.D.	NO.	MEDIAN	MEAN
0-4	541	$33,000	$33,700
5-9	622	42,000	42,200
10-14	646	47,300	47,200
15-19	694	50,000	51,000
20-24	471	52,000	52,900
25-29	317	55,500	57,700
30+	373	60,000	61,000

*Includes only members of the AIP member societies.

TABLE 98

1985 SALARIES OF PH.D PHYSICISTS* BY GEOGRAPHIC REGION

GEOGRAPHIC REGION	NO.	MEDIAN	MEAN
New England	320	$47,000	$49,300
Middle Atlantic	731	48,900	50,100
South Atlantic	603	46,500	47,700
East North Central	473	42,000	44,400
East South Central	127	41,400	42,300
West North Central	149	40,000	41,300
West South Central	215	45,000	47,000
Mountain	346	47,000	48,200
Pacific	714	49,900	51,100

*Includes only members of the AIP member societies.

TABLE 99

1985 MEDIAN SALARIES OF PH.D PHYSICISTS* BY GEOGRAPHIC REGION AND TYPE OF EMPLOYER

GEOGRAPHIC REGION	TYPE OF EMPLOYER			
	Academic	Industry	Government	FFRDC**
New England	$40,000	$53,000	$52,800	$
Middle Atlantic	40,000	54,000	50,300	48,000
South Atlantic	37,000	51,800	53,000	
East North Central	37,000	49,500		49,500
East South Central	36,000			46,400
West North Central	35,300	50,000		
West South Central	36,000	53,200		
Mountain	36,000	54,000	48,900	52,900
Pacific	42,000	53,000	47,000	52,000

*Includes only members of the AIP member societies. **Federally funded R&D Centers.
Note: Blanks indicate too few respondents to calculate reliable medians.

SOURCE: American Institute of Physics, Unpublished data.

TABLE 100

1985 SALARIES OF Ph.D. PHYSICISTS* BY SELECTED STATES

STATE	Number	Median	Mean
Alabama	22	$41,400	$42,200
Arizona	52	41,700	43,400
California	634	50,000	51,900
Northern	301	51,500	52,300
Southern	332	49,000	51,600
Colorado	90	44,000	47,400
Connecticut	69	45,400	48,100
Delaware	28	44,000	45,300
District of Columbia	105	55,000	54,500
Florida	53	39,000	41,600
Georgia	39	44,100	44,400
Illinois	167	42,000	45,700
Indiana	53	37,000	40,700
Iowa	27	38,000	39,200
Kansas	20	38,900	38,800
Louisiana	23	40,500	42,400
Maryland	187	49,300	49,000
Massachusetts	220	48,200	50,500
Michigan	93	43,000	44,800
Minnesota	46	45,000	46,000
Missouri	37	42,000	41,500
New Jersey	225	50,100	56,100
New Mexico	150	51,200	53,600
New York	340	48,000	49,000
Northern	175	47,100	48,800
Southern	176	49,000	49,200
North Carolina	47	36,500	41,900
Ohio	110	44,000	45,900
Oregon	25	35,200	42,500
Pennsylvania	165	42,500	44,200
Tennessee	88	42,700	43,100
Texas	164	47,700	48,600
Utah	24	38,000	40,400
Virginia	112	49,500	49,200
Washington	41	42,900	44,500
Wisconsin	49	35,800	39,900

TABLE 101

1985 SALARIES OF INDUSTRIAL PHYSICISTS* BY YEARS SINCE DEGREE AND SEX

	MALE			FEMALE		
	NO.	MEDIAN	MEAN	NO.	MEDIAN	MEAN
0-4 Years Since Degree	237	$40,700	$41,100	30	$39,500	$38,100
5-9 Years Since Degree	346	46,700	47,000	25	42,000	43,800
10+ Years Since Degree	977	57,000	61,000	25	45,000	47,300

*Includes only members of the AIP member societies.

SOURCE: Abbott, Langer & Associates, Compensation in the MIS/dp Field, 4th Edition.

TABLE 102

NUMBER, MEAN AND MEDIAN ANNUAL SALARIES AND COMPENSATION OF DATA PROCESSING PERSONNEL
BY JOB TITLE, OCTOBER 1986

JOB TITLE	SALARY			TOTAL COMPENSATION		
	Number Reported	Mean	Median	Number Reported	Mean	Median
Top MIS/IS Officer	43	$54,937	$54,000	43	$56,828	$55,000
Top MIS/dp Officer	326	46,024	44,640	326	47,901	45,000
Top Data Processing Manager	227	46,228	42,600	227	47,254	43,370
Asst. Data Processing Manager	124	43,983	43,840	124	44,747	44,127
Data Base Manager	77	42,996	42,861	77	28,800	42,861
Data Base Analyst/Programmer	1,120	30,634	30,014	1,120	30,666	30,014
Project Team Leader	1,350	50,120	52,270	1,350	50,971	52,770
Computer Systems Analysis/Systems Programming Manager/Supervisor	129	39,673	40,000	129	40,302	42,000
Lead Systems Analyst/Programmer	469	49,084	50,170	469	49,123	50,170
Senior Systems Analyst/Programmer	477	38,935	40,019	477	39,040	40,019
Junior Systems Analyst/Programmer	291	24,329	24,606	291	24,357	24,606
Computer Systems Analysis/Applications Programming Manager/Supervisor	103	43,362	43,980	103	44,910	45,000
Lead Systems Analyst/Applications Programmer	273	39,419	39,692	273	40,235	39,692
Senior Systems Analyst/Applications Programmer	591	33,053	32,000	591	33,658	32,155
Junior Systems Analyst/Applications Programmer	449	27,665	27,000	449	28,105	27,000
Systems Analysis Manager/Supervisor	61	44,324	42,800	61	45,494	42,800
Lead Systems Analyst	173	40,394	42,338	173	40,581	42,338
Senior Systems Analyst	534	35,855	34,442	534	35,982	34,442
Junior Systems Analyst	229	29,908	29,856	229	29,937	29,856
Systems Programming Manager/Supervisor	119	42,154	40,986	119	42,817	41,000
Lead Systems Programmer	186	43,970	46,077	186	44,097	46,077
Senior Systems Programmer	750	36,492	37,003	750	36,578	37,044
Junior Systems Programmer	269	26,564	26,028	269	26,696	26,200
Systems Programmer Trainee	63	25,348	25,500	63	25,373	25,500
Applications Programming Manager/Supervisor	134	42,052	42,060	134	42,465	42,482
Lead Applications Programmer	218	33,690	33,500	218	34,320	36,000
Senior Applications Programmer	996	31,725	32,908	996	32,635	32,908
Junior Applications Programmer	1,112	25,630	27,040	1,112	25,976	27,391
Applications Programmer Trainee	14	25,522	25,522	14	23,388	23,388
Documentation Specialist	76	23,901	21,840	76	24,197	24,253
User Support Coordinator	158	30,067	30,000	158	30,235	30,490
Communications Manager	58	37,115	37,257	58	37,444	37,257
Communications Operator	103	24,735	23,170	103	24,852	23,420
Computer Operations Manager/Supervisor	327	32,673	31,980	327	33,081	32,017
Computer I/O Control Manager/Supervisor	118	23,941	22,516	118	24,172	22,700
Computer I/O Control Clerk	507	16,534	16,120	507	16,586	16,120
Lead Computer Operator	725	22,865	22,899	725	22,968	23,000
Senior Computer Operator	1,075	19,662	18,852	1,075	19,768	19,000
Junior Computer Operator	818	16,472	16,224	818	16,535	16,224
Tape Librarian	148	15,709	14,351	148	15,738	14,351
Key Entry Supervisor	24	19,391	18,925	24	19,466	18,925
Lead Key Entry Operator	163	16,147	16,286	163	16,196	16,286
Senior Key Entry Operator	456	15,288	14,930	456	15,363	14,980
Junior Key Entry Operator	405	14,059	13,208	405	14,142	13,500

SOURCE: Abbott, Langer & Associates, *Compensation in the MIS/dp Field*, 4th Edition.

TABLE 103

MEDIAN ANNUAL SALARIES OF DATA PROCESSING PERSONNEL BY JOB TITLE AND TYPE OF EMPLOYER, OCTOBER 1986

JOB TITLE	TYPE OF EMPLOYER			
	All Mfg./ Extractive Employers	All Non-Mfg. Employers	Educational Institutions	Governmental Organizations
Top MIS/IS Officer	$52,422	$54,000	$46,619	$52,189
Top MIS/dp Officer	44,510	44,685	38,200	41,528
Top Data Processing Manager	38,500	44,666	39,099	37,921
Asst. Data Processing Manager	44,500	43,000	35,000	38,727
Data Base Manager	41,530	43,740	38,000	43,740
Data Base Analyst/Programmer	35,731	30,014	26,200	35,800
Project Team Leader	47,000	52,270	36,000	56,000
Computer Systems Analysis/Systems Programming Manager/Supervisor	43,300	38,550	30,920	38,550
Lead Systems Analyst/Programmer	35,000	50,274	26,068*	37,000
Senior Systems Analyst/Programmer	31,836	40,435	30,050	44,376
Junior Systems Analyst/Programmer	24,450	24,606	18,000	
Computer Systems Analysis/Applications Programming Manager/Supervisor	43,390	44,600	37,750	35.835
Lead Systems Analyst/Applications Programmer	37,095	39,900	31,243	36,889
Senior Systems Analyst/Applications Programmer	33,500	31,117	26,517	29,897
Junior Systems Analyst/Applications Programmer	28,140	25,383	22,706	24,712
Systems Analysis Manager/Supervisor	43,004	42,511	42,223	40,000
Lead Systems Analyst	35,421	42,636	32,000	34,841
Senior Systems Analyst	37,000	38,442	28,000	33,584
Junior Systems Analyst	33,000	29,193	22,721	28,932
Systems Programming Manager/Supervisor	41,000	40,498	37,835	41,000
Lead Systems Programmer	39,400	46,155	29,464	35,800
Senior Systems Programmer	34,000	37,092	30,000	36,679
Junior Systems Programmer	26,418	26,028	24,000	25,126
Systems Programmer Trainee	22,710	25,560		16,000
Applications Programming Manager/Supervisor	42,000	42,180	35,630	39,020
Lead Applications Programmer	33,500	35,000	24,625	28,000
Senior Applications Programmer	30,000	33,238	22,000	27,216
Junior Applications Programmer	22,500	27,040	20,170	28,000
Applications Programmer Trainee	18,500	20,000	16,414	14,390
Documentation Specialist	29,449	23,596	22,358	17,250
User Support Coordinator	26,190	30,000	24,090	19,147
Communications Manager	41,042	34,230	34,000	33,771
Communications Operator	21,900	23,170	21,785	24,897
Computer Operations Manager/Supervisor	31,370	32,073	23,551	28,060
Computer I/O Control Manager/Supervisor	22,302	22,698	20,250	26,000
Computer I/O Control Clerk	18,000	15,917	17,520	18,000
Lead Computer Operator	21,000	23,067	17,200	22,000
Senior Computer Operator	18,180	18,966	16,650	20,350
Junior Computer Operator	15,792	16,224	13,925	17,000
Tape Librarian	20,688	14,351	14,877	17,922
Key Entry Supervisor	19,176	18,980	16,645	18,264
Lead Key Entry Operator	17,392	15,830	15,718	15,074
Senior Key Entry Operator	15,500	14,530	14,000	15,084
Junior Key Entry Operator	14,000	13,208	14,400	14,432

* Less than five respondents

SOURCE: Abbott, Langer & Associates, Compensation in the MIS/dp Field, 4th Edition.

TABLE 104

MEDIAN ANNUAL SALARIES OF DATA PROCESSING PERSONNEL BY JOB TITLE AND LEVEL OF EDUCATION, OCTOBER 1986

JOB TITLE	LEVEL OF EDUCATION						
	High School Diploma	Some College No Degree	Associate Degree	Bachelor Degree	MA/MS Degree	MBA Degree	Doctoral Degree
Top MIS/IS Officer	$	$36,500*	$	$46,752	$57,750	$56,684	$
Top MIS/dp Officer		35,250	39,460	45,000	42,000	52,000	39,000
Top Data Processing Manager	37,100	39,520	35,500	45,000	50,000	45,343	41,000*
Asst. Data Processing Manager	33,600*	45,450	32,334	45,000	41,715	48,875	
Data Base Manager	32,863*	38,990	26,500*	41,835	55,716		
Data Base Analyst/Programmer	35,800	33,000	26,200	30,014	37,300		
Project Team Leader	20,094*	42,940	33,040	52,770	54,120	50,000	
Computer Systems Analysis/Systems Programming Manager/Supervisor	17,000	38,000	38,520	42,611	38,550		
Lead Systems Analyst/Programmer		37,617	42,128	51,002	46,980		
Senior Systems Analyst/Programmer	32,412	32,100	31,728	40,539	34,590		
Junior Systems Analyst/Programmer	27,348	26,689	29,100	24,502			
Computer Systems Analysis/Applications Programming Manager/Supervisor	45,000	39,000	42,000	44,600	46,014		
Lead Systems Analyst/Applications Programmer	39,152	41,400	37,000	34,166		45,283	
Senior Systems Analyst/Applications Programmer	33,189	29,897	36,938	33,736	35,000		
Junior Systems Analyst/Applications Programmer	25,839	24,712	30,992	27,000	23,000	24,690	
Systems Analysis Manager/Supervisor		34,900	32,094*	42,200	54,000	40,000*	
Lead Systems Analyst		37,500*	38,610	39,253			
Senior Systems Analyst	36,752	33,000	31,000	34,442	48,400	35,136	
Junior Systems Analyst	32,896	27,000	28,696	29,193			
Systems Programming Manager/Supervisor	36,974	41,500	34,682	41,657	38,806		
Lead Systems Programmer	36,889	34,082	34,000	46,779	51,800		
Senior Systems Programmer	36,679	37,000	28,360	37,092	48,400		
Junior Systems Programmer	27,688	26,509	24,699	26,028			
Systems Programmer Trainee	16,875*	24,288	33,400	27,159			
Applications Programming Manager/Supervisor	31,174*	37,040	35,298	42,742	46,910		
Lead Applications Programmer		31,183	29,000	33,250	51,800		
Senior Applications Programmer	26,500	27,280	27,294	28,752	29,750		
Junior Applications Programmer	27,000	27,429	22,592	27,708	36,200		
Applications Programmer Trainee	18,500	25,500	21,511	26,702			
Documentation Specialist	18,741	23,000	24,881	27,000	26,250*		
User Support Coordinator	19,953	22,244	19,750	32,958	33,280		
Communications Manager	26,946	33,000	34,200	43,430			
Communications Operator	22,868	28,000	24,827	29,368			
Computer Operations Manager/Supervisor	27,500	31,620	29,910	36,920	35,500*		
Computer I/O Control Manager/Supervisor	22,000	23,000	25,500	29,688			
Computer I/O Control Clerk	15,838	16,888	21,102	17,900			
Lead Computer Operator	23,374	21,000	21,786	22,429*			
Senior Computer Operator	19,000	18,645	17,347	20,000	35,840		
Junior Computer Operator	16,224	16,000	14,900	15,600			
Tape Librarian	14,351		18,655				
Key Entry Supervisor	19,065	18,300	23,400				
Lead Key Entry Operator	16,488	14,196					
Senior Key Entry Operator	14,960	13,198	10,280*				
Junior Key Entry Operator	12,679	17,000					

* Less than five respondents

Source Abbott, Langer & Associates, Compensation in the MIS/dp Field, 4th Edition.

TABLE 105

MEDIAN ANNUAL SALARIES OF DATA PROCESSING PERSONNEL BY JOB TITLE AND LENGTH OF EXPERIENCE, OCTOBER 1986

JOB TITLE	LENGTH OF EXPERIENCE							
	Under 1 Year	1 or 2 Years	3 or 4 Years	5 - 9 Years	10 - 14 Years	15 - 19 Years	20 - 24 Years	25 or More
Top MIS/IS Office	$	$36,000*	$45,250*	$48,588	$55,909	$63,000	$52,100*	$54,573*
Top MIS/dp Officer		30,020	34,500	40,000	44,325	45,000	50,000	55,638
Top Data Processing Manager			31,500	46,020	39,000	44,640	47,890	48,000
Asst. Data Processing Manager		20,643*	49,566	33,929	42,500	49,772	48,876	45,225
Data Base Manager			42,800	39,300	45,120	51,500	46,464	
Data Base Analyst/Programmer		20,200	35,731	30,014	37,960			
Project Team Leader		39,096*	41,224	44,835	52,770	56,000		
Computer Systems Analysis/Systems Programming Manager/Supervisor			27,000	38,370	42,150	47,151	50,329	
Lead Systems Analyst/Programmer		22,000	35,672	37,764	51,376			
Senior Systems Analyst/Programmer			31,097	40,539	32,923			
Junior Systems Analyst/Programmer	24,502	25,500	28,224	25,758				
Computer Systems Analysis/Applications Programming Manager/Supervisor			28,750*	41,600	45,195	43,392	53,775*	47,623
Lead Systems Analyst/Applications Programmer			39,692	34,100	50,232	37,000		
Senior Systems Analyst/Applications Programmer		24,000	34,346	30,500	32,615	38,750		
Junior Systems Analyst/Applications Programmer	22,800	24,048	30,021	24,712	28,145			
Systems Analysis Manager/Supervisor			51,564	38,168	48,934	53,000		
Lead Systems Analyst			33,000	39,253	44,253			
Senior Systems Analyst		48,400	34,442	33,000	38,212	31,655	32,352	
Junior Systems Analyst	36,000	25,948	28,900	32,846	25,555			
Systems Programming Manager/Supervisor			38,041	37,900	42,000	43,200	42,000	
Lead Systems Programmer			31,823	36,900	48,360	36,889		
Senior Systems Programmer		28,250	34,281	37,092	39,000	36,679	36,679*	
Junior Systems Programmer	23,000	24,549	31,000	27,000	29,040			
Systems Programmer Trainee	25,560	26,000	21,051*					
Applications Programming Manager/Supervisor			35,601	42,360	42,000	37,836	48,936	
Lead Applications Programmer		27,000	29,796	33,500	44,000			
Senior Applications Programmer	28,670	26,244	33,863	29,915	33,500	33,450		
Junior Applications Programmer	22,592	25,500	28,000	27,000	33,800			
Applications Programmer Trainee	21,025	14,390	20,600					
Documentation Specialist	19,059	23,192	24,420	24,254				
User Support Coordinator	20,300	37,791	24,000	31,430	44,300			
Communications Manager			29,335	47,840	46,308			
Communications Operator	14,200	20,000	28,752	23,170	30,000			
Computer Operations Manager/Supervisor	17,292*	20,350	35,212	30,000	32,594	30,776	35,000	34,536
Computer I/O Control Manager/Supervisor		22,000	21,320	24,500	23,660	27,000	30,979*	
Computer I/O Control Clerk	14,534	15,126	16,500	20,928	25,040	27,000		
Lead Computer Operator	18,870	21,480	22,000	24,274	25,155	22,800	23,000*	
Senior Computer Operator	18,050	17,839	18,961	21,050	19,390	21,000	21,000*	
Junior Computer Operator	15,792	15,534	19,000	19,800				
Tape Librarian	14,150	14,351	13,000	20,444				
Key Entry Supervisor		18,264	19,065	19,573	19,176	23,000*	21,879*	
Lead Key Entry Operator	11,472	16,286	16,488	15,830	17,659		17,148	
Senior Key Entry Operator	15,400	15,000	14,373	13,700	14,000	18,639		
Junior Key Entry Operator	14,396	13,208	20,196	14,928	28,725			

* Less than five respondents

SOURCE: Abbott, Langer & Associates, Compensation in the MIS/dp Field, 4th Edition.

TABLE 106

MEDIAN ANNUAL SALARIES OF DATA PROCESSING PERSONNEL BY JOB TITLE AND GEOGRAPHICAL AREA, OCTOBER, 1986

JOB TITLE	GEOGRAPHICAL AREA						
	North-Eastern States	Southern States	Mid-western States	North Central States	South western States	Mountain States	Pacific States
Top MIS/IS Officer	$44,377	$57,500	$51,130	$	$63,000	$	$56,500
Top MIS/dp Officer	45,000	46,400	43,321	34,000	44,000	43,315	49,000
Top Data Processing Manager	39,520	36,000	42,000	42,026	42,318	39,000	50,981
Asst. Data Processing Manager	41,800	45,186	51,102	34,092	35,484	35,193	45,896
Data Base Manager	45,775	43,300	41,670	34,200	49,500	37,609	44,820
Data Base Analyst/Programmer	28,371	26,083	35,731	25,550	38,000	35,800	30,014
Project Team Leader	50,000	53,352	50,523	38,900	41,224	43,000	54,018
Computer Systems Analysis/Systems Programming Manager/Supervisor	33,500	41,371	38,489	42,611	42,312	45,650	38,550
Lead Systems Analyst/Programmer	52,998	48,256	37,617	42,016			50,066
Senior Systems Analyst/Programmer	40,019	35,678	37,209	38,709	31,000	41,517	41,350
Junior Systems Analyst/Programmer	24,440	25,002	23,691	27,348			24,502
Computer Systems Analysis/Applications Programming Manager/Supervisor	45,000	45,000	45,195	37,840	39,000	47,623	51,222
Lead Systems Analyst/Applications Programmer	51,000	45,344	45,283	32,225	34,944	37,000	34,138
Senior Systems Analyst/Applications Programmer	37,500	35,800	29,789	29,897	30,872	31,655	36,000
Junior Systems Analyst/Applications Programmer	36,400	30,867	25,400	24,712	28,140	23,985	27,000
Systems Analysis Manager/Supervisor	53,121	41,435	40,000	48,500			51,428
Lead Systems Analyst	41,087	37,000	42,636	31,141	42,794		46,444
Senior Systems Analyst	40,000	34,200	33,000	30,812	34,442	36,752	42,000
Junior Systems Analyst	29,193	32,896	28,696	21,263	25,948	32,500	36,000
Systems Programming Manager/Supervisor	42,000	38,000	40,488	40,448	42,600	45,117	48,021
Lead Systems Programmer	51,800	32,500	33,887	45,614	48,235	36,889	48,880
Senior Systems Programmer	31,222	35,006	29,328	34,300	39,000	35,318	37,055
Junior Systems Programmer	27,300	28,018	23,920	32,000	26,028	22,325	27,410
Systems Programmer Trainee	28,759	26,000	23,100		19,392		24,000
Applications Programming Manager/Supervisor	43,000	41,000	41,028	37,740	42,481	43,330	47,873
Lead Applications Programmer	37,000	35,000	33,500	20,000	29,796	33,500	36,800
Senior Applications Programmer	33,204	27,108	28,000	32,553	34,034	33,500	37,226
Junior Applications Programmer	27,040	28,000	23,388	22,512	23,832	27,000	27,540
Applications Programmer Trainee	25,500	19,428	19,650	14,390	26,702	17,824	23,850
Documentation Specialist	24,253	27,000	22,000*		28,038		23,096
User Support Coordinator	27,250	21,500	31,430	33,280	32,916	26,208	38,306
Communications Manager	38,942	34,400	33,000	32,796	48,000*	44,000	31,728
Communications Operator	27,384	27,000	19,992	21,700	18,000	30,000	23,712
Computer Operations Manager/Supervisor	30,103	30,014	32,594	26,500	33,900	32,073	35,830
Computer I/O Control Manager/Supervisor	23,000	22,440	20,452	19,707	19,240	20,415	26,410
Computer I/O Control Clerk	18,100	18,000	15,838	15,857	13,728	14,605	17,487
Lead Computer Operator	22,091	24,274	23,067	16,300	25,733	21,745	26,390
Senior Computer Operator	19,992	18,782	18,092	18,075	19,311	17,524	20,557
Junior Computer Operator	16,000	16,700	15,534	15,100	14,000	18,653	17,940
Tape Librarian	19,325	13,000	14,351	15,440*	15,732	20,200	19,500
Key Entry Supervisor	20,600	16,888	18,925	18,980	20,041	15,000	21,702
Lead Key Entry Operator	15,366	15,386	17,013	16,962	13,676	15,281	18,421
Senior Key Entry Operator	15,000	14,772	14,269	15,488	12,927	14,000	17,836
Junior Key Entry Operator	12,500	13,208	14,000	13,000	11,838	13,104	18,720

* Less than five respondents

SOURCE: Abbott, Langer & Associates, Compensation in the MIS/dp Field, 4th Edition.

TABLE 107

MEDIAN ANNUAL SALARIES AND TOTAL COMPENSATION OF DATA PROCESSING PERSONNEL BY JOB TITLE AND SEX, OCTOBER 1986

JOB TITLE	MALE		FEMALE	
	Salary	Total Compensation	Salary	Total Compensation
Top MIS/IS Officer	$54,342	$54,500	$43,000	$43,000
Top MIS/dp Officer	45,000	47,100	33,500	34,010
Top Data Processing Manager	40,148	41,303	28,600	28,600
Asst. Data Processing Manager	45,411	45,673	32,500	32,500
Data Base Manager	44,535	44,560	28,890	29,250
Data Base Analyst/Programmer	35,575	35,777	37,440	37,440
Project Team Leader	50,000	56,700	41,327	42,000
Computer Systems Analysis/Systems Programming Manager/Supervisor	40,000	42,611	32,328	32,328
Lead Systems Analyst/Programmer	33,000	34,200		
Senior Systems Analyst/Programmer	31,561	31,561	26,041	26,041
Junior Systems Analyst/Programmer	17,800	17,800	21,750	21,750
Computer Systems Analysis/Applications Programming Manager/Supervisor	43,136	44,552	36,900	39,131
Lead Systems Analyst/Applications Programmer	33,895	34,062	30,008	31,008
Senior Systems Analyst/Applications Programmer	32,433	33,045	29,000	30,800
Junior Systems Analyst/Applications Programmer	24,690	24,690	23,917	24,570
Systems Analysis Manager/Supervisor	44,000	44,000	33,176	33,176
Lead Systems Analyst	42,794	42,794	30,900	30,900
Senior Systems Analyst	33,000	33,000	29,778	29,778
Junior Systems Analyst	32,252	32,252	32,846	32,846
Systems Programming Manager/Supervisor	40,948	41,000	38,806	38,806
Lead Systems Programmer	38,200	38,200	29,254*	29,254*
Senior Systems Programmer	32,000	32,000	28,804	28,804
Junior Systems Programmer	26,000	26,000	24,000	24,000
Systems Programmer Trainee	23,050	23,050	16,875	16,875
Applications Programming Manager/Supervisor	41,014	41,389	34,808	34,808
Lead Applications Programmer	27,789	27,789	27,540	27,540
Senior Applications Programmer	28,700	28,700	32,000	32,000
Junior Applications Programmer	21,765	22,000	21,516	21,798
Applications Programmer Trainee	18,600	19,400	16,500	16,500
Documentation Specialist	22,716	24,100	22,840	22,840
User Support Coordinator	27,250	27,500	21,750	22,000
Communications Manager	39,263	39,263	24,337	24,337
Communications Operator	27,192	27,384	19,086	19,086
Computer Operations Manager/Supervisor	32,073	32,447	26,070	27,000
Computer I/O Control Manager/Supervisor	26,800	26,800	22,000	22,000
Computer I/O Control Clerk	14,144	14,144	16,500	16,500
Lead Computer Operator	22,500	22,730	17,255	17,954
Senior Computer Operator	20,000	20,140	17,345	17,346
Junior Computer Operator	15,500	15,600	14,900	15,000
Tape Librarian	14,300	14,300	15,974	15,974
Key Entry Supervisor	25,188*	25,188*	19,176	19,176
Lead Key Entry Operator	16,296	16,296	17,895	18,645
Senior Key Entry Operator	14,000	14,000	15,000	15,000
Junior Key Entry Operator	11,688*	11,738*	13,000	13,000

* Less than five respondents

Blanks indicate too few individuals too be meaningful.

SOURCE: Hitchcock Publishing Company, "29th Annual DP Salary Survey." Infosystems, June 1987

TABLE 108

AVERAGE AND MEDIAN WEEKLY SALARIES IN DATA PROCESSING BY JOB DESCRIPTION, 1987

JOB DESCRIPTION	Number Reported	Average Salary	Median Salary
Top MIS Official	163	$1,131	$1,078
Manager of Data Processing	435	820	800
Asst. Manager of Data Processing	105	799	865
Data Base Systems Manager	86	725	711
Mgr./Supvr. of Systems Analysis	233	820	826
Systems Analyst	706	687	686
Mgr./Supvr. of Applications Programming	207	796	800
Applications Programmer	2,610	478	423
Data/Telecommunications Manager	50	879	902
Data Communications Analyst	126	682	692
Data Communications Operator	104	323	307
Data Entry Manager	179	663	634
Computer Operator	1,226	386	384
Computer I/O Control Manager	111	440	426
Tape Librarian	60	375	346
Data Entry Supervisor	108	409	384
Data Entry Operator	786	301	291
Project/Team Leader	111	811	817
Information Center Manager	46	729	735
Information Center Analyst/Trainer	123	551	507
Manager of Microcomputers	33	575	552
End User Computer Specialist/ Office Automation Specialist	197	428	384

SOURCE: Hitchcock Publishing Company, "28th Annual DP Salary Survey." Infosystems, June 1986

TABLE 109

AVERAGE AND MEDIAN WEEKLY SALARIES IN DATA PROCESSING BY JOB DESCRIPTION, 1986

JOB DESCRIPTION	Number Reported	Average Salary	Median Salary
Top MIS Official	208	$1,071	$1,000
Manager of Data Processing	406	764	761
Asst. Manager of Data Processing	74	734	728
Data Base Systems Manager	26	742	769
Mgr./Supvr. of Systems Analysis & Programming	164	836	809
Lead Systems Analyst & Programmer	226	689	673
Senior Systems Analyst & Programmer	497	604	605
Junior Systems Analyst & Programmer	346	515	497
Mgr./Supvr. of Systems Analysis	18	750	768
Lead Systems Analyst	31	676	675
Senior Systems Analyst	78	631	636
Junior Systems Analyst	35	508	498
Mgr./Supvr. of Systems Programming	50	814	804
Lead Systems Programmer	58	741	711
Senior Systems Programmer	98	668	653
Junior Systems Programmer	43	473	452
Systems Programmer Trainee	10	375	351
Mgr./Supvr. of Applications Programming	52	741	730
Lead Applications Programmer	100	603	600
Senior Applications Programmer	322	538	527
Junior Applications Programmer	250	428	423
Applications Programmer Trainee	56	341	346
Data Communications Manager	20	774	730
Data Center Manager	75	670	692
Data Communications Manager	41	658	615
Data Communications Operator	35	426	413
Mgr./Supvr. of Computer Operations	182	534	538
Lead Computer Operator	317	403	380
Senior Computer Operator	514	367	350
Junior Computer Operator	381	290	288
Computer I/O Control Manager	57	423	401
Tape Librarian	54	346	327
Data Entry Supervisor	102	401	371
Lead Data Entry Operator	231	320	307
Senior Data Entry Operator	423	308	291
Junior Data Entry Operator	293	274	280
Project/Team Leader	37	678	678
Information Center Manager	20	743	719
Information Center Analyst/Trainer	46	534	502
Manager of Microcomputers	16	616	557
End User Specialist	48	537	485
User Training Specialist	21	449	406

SOURCE: Hitchcock Publishing Company, "29th Annual DP Salary Survey," Infosystems, June 1987.

TABLE 110

AVERAGE WEEKLY SALARIES OF DATA PROCESSING PERSONNEL BY JOB DESCRIPTION AND GEOGRAPHIC AREA, 1987

JOB DESCRIPTION	GEOGRAPHIC AREA									
	New England	Middle Atlantic	South Atlantic	East North Central	East South Central	West North Central	West South Central	Mountain	Pacific	Overall
Top MIS Official	$1,361	$1,327	$1,038	$1,088	$1,002	$994	$973	$	$1,147	$1,131
Manager of Data Processing	838	875	832	824	706	715	829	713	836	820
Assistant Manager of Data Processing	653	752	793	858		488	866		829	799
Data Base Systems Manager	1,071	770	881	831		483			963	742
Mgr./Supervisor of System Analysis	874	853	865	903		628	879		828	820
Systems Analyst	700	665	747	663	572	592	717	691	706	687
Mgr./Supervisor of Applications Programming	825	759	900	765	669	607	844	771	814	796
Applications Programmer	538	575	600	385	479	485	617	589	653	478
Data Telecommunications Manager		878	870	957			820		812	879
Communications Analyst		675	572	746		451	666		614	682
Communications Operator	375		438	264		257	591		457	323
Data Center Manager	728	699	659	650	570	576	692	602	693	663
Computer Operator	382	365	437	380	323	344	403	370	402	386
Computer I/O Control Manager	427	447	424	466		396	603		414	440
Tape Librarian		326	421	481			313		370	375
Data Entry Supervisor	448	408	439	423	387	331	454		455	409
Data Entry Operator	335	334	332	275	264	260	293	313	343	301
Project Team Leader	787	825	820	839		711	814	648		811
Information Center Manager		648	708	813		737				729
Information Center Analyst/Manager	547	538	585	604		493			542	551
Manager of Microcomputers	468	473		565		538		513		575
End User Computer Specialist/Office Automation Specialist	426	445	333	494	455	332		499	481	443

NOTE: Blanks denote insufficient information.

SOURCE: Hitchcock Publishing Company, "28th Annual DP Salary Survey," Infosystems, June 1986.

TABLE 111

AVERAGE WEEKLY SALARIES OF DATA PROCESSING PERSONNEL BY JOB DESCRIPTION AND GEOGRAPHIC AREA, 1986

JOB DESCRIPTION	GEOGRAPHIC AREA									
	New England	Middle Atlantic	South Atlantic	East North Central	East South Central	West North Central	West South Central	Mountain	Pacific	Overall
Top MIS Official	$943	$1,413	$964	$931	$756	$923	$917	$1,034	$987	$1,071
Data Base Systems Manager		781	810	795			615			742
Manager of Data Processing	783	809	748	748	644	713	767	770	772	764
Assistant Manager of Data Processing		795	744	686			751	645	714	734
Manager/Supervisor of System Analysis and Programming	846	984	835	766	635	713	777	779	823	836
Lead Systems Analyst and Programmer	628	822	654	634		560	639	671	710	689
Senior Systems Analyst and Programmer	587	668	568	547		548	592	665	629	604
Junior Systems Analyst and Programmer	495	574	403	460	345	424	493	526	533	515
Manager/Supervisor of Systems Analysis		743	768	658					723	750
Lead Systems Analyst	865	645		650			618		688	676
Senior Systems Analyst	631	589	672	615		585	598		655	631
Junior Systems Analyst	511	480	520	476			517	556	548	508
Manager/Supervisor of Systems Programming	786	931	819	782		751	760		773	814
Lead Systems Programmer	604	847	708	681		599			695	741
Senior Systems Programmer	579	737	664	585		483			637	668
Junior Systems Programmer	437	527	412	429		448		468		473
Systems Programmer Trainee		396	372				419			375
Manager/Supervisor of Applications Programming	714	769	898	805		740	685	730	688	741
Lead Applications Programmer	584	613	556	568		589	534	608	635	603
Senior Applications Programmer	548	579	533	513	417	499	490	482	578	538
Junior Applications Programmer	439	440	396	423		409	407	445	460	428
Applications Programmer Trainee	370	304	325	324		375	346	413	341	341
Data Communications Manager		840	779	768			700		734	774
Data Communications Analyst		828	542	542			505		608	658
Data Communications Operator		493	328	367					429	426
Data Center Manager		698	759	663		551	587		657	670
Manager/Supervisor of Computer Operations	576	543	567	544	383	510	478	538	539	534
Lead Computer Operator	376	438	379	397	358	365	371	354	431	403
Senior Computer Operator	367	399	366	346	297	322	357	346	379	367
Junior Computer Operator	299	291	295	295	260	278	306	286	274	290
Computer I/O Control Manager	386	515	384	416			334	387	362	423
Tape Librarian		373	313	372		269	320		377	346
Data Entry Supervisor	348	432	361	395		375	386		397	401
Lead Data Entry Operator	324	376	304	297	249	317	280	341	326	320
Senior Data Entry Operator	297	316	281	288		293	273	325	307	308
Junior Data Entry Operator	247	295	272	282	202	271	214	243	292	274
Project Team Leader			739	689		551	525	737	679	678
Information Center Manager		753		748			625		704	743
Information Center Analyst/Trainee	531	551	592	529			500	550	495	534
Manager of Microcomputers		633	663	592						616
End User Specialist	486	610	556	491			485			537
User Training Specialist		473	428	469			410			449

NOTE: Blanks denote insufficient information.

SOURCE: Hitchcock Publishing Company, "29th Annual DP Salary Survey," Infosystems, June 1987.

TABLE 112

AVERAGE WEEKLY SALARIES OF DATA PROCESSING PERSONNEL BY JOB DESCRIPTION AND TYPE OF INDUSTRY, 1987

JOB DESCRIPTION	TYPE OF INDUSTRY									MANUFACTURING AND PROCESSING			
	Advertising Printing, & Publishing	Educational	Engr. & Construction	Governmental Agencies	Hospital/ Health Care	Public Utilities	D.P. Services	Wholesale Sales & Distr.	Insurance	Electrical/ Electronic	Machinery Instruments, Equip.	Chemicals, Petro. Coal	Metal Producing & Fab.
Top MIS Official	$1,329	$868	$725	$801	$1,020	$1,592	$	$1,208	$1,476	$1,063	$1,207	$1,471	$981
Manager of Data Processing	880	687	684	783	673	1,244	711	768	906	936	841	832	768
Asst. Manager of Data Processing	612	602		771	640	898			726				
Data Base Systems Manager				699		1,087			484	929			
Manager/Supervisor of Systems Analysis	874	783		772	691	965	776	853	680	782	770	927	
Systems Analyst	724	566		682	563	[illegible]97	772	736	595	731	672	770	623
Manager/Supervisor of Applications Programming	641	592		630	948		688	808	821	844			
Applications Programmer	463	471	445	535	467	673	565	531	552	571	598	648	547
Data/Telecommunications Manager				706		927		615					
Communications Analyst				483		728						674	
Communications Operator				516								621	
Data Center Manager	612	619		640	580	892		744	682	803	621	859	539
Computer Operator	417	347	310	358	333	506	354	330	463	370	402	439	346
Computer I/O Control Manager	537	377		461	377	606			385		470	530	
Tape Librarian				315		376			384				
Data Entry Supervisor	348	374		460	382	516		391	329	302	347		403
Data Entry Operator	303	299	266	341	292	392	311	270	325		313	332	335
Project/Team Leader	790			679	667	800			693				
Information Center Manager	453	561		634		767							
Information Center Analyst/Trainer				439		728			516	548		795	
Manager of Microcomputers		345		469		543		512					
End User Computer Specialist/ Office Automation Specialist		344		439	448				400		503		

NOTE: Blanks denote insufficient information.

SOURCE: Hitchcock Publishing Company, "28th Annual DP Salary Survey," *Infosystems*, June 1986.

TABLE 113

AVERAGE WEEKLY SALARIES OF DATA PROCESSING PERSONNEL BY JOB DESCRIPTION AND TYPE OF INDUSTRY, 1986

JOB DESCRIPTION	TYPE OF INDUSTRY												
										MANUFACTURING AND PROCESSING			
	Advertising Printing, & Publishing	Educational	Engr. & Construction	Governmental Agencies	Hospital/ Health Care	Retail Sales & Distrib.	D.P. Services	Wholesale Sales & Distr.	Insurance	Electrical/ Electronic	Machinery Instruments, Equip.	Chemicals, Petro. Coal	Metal Producing & Fab.
Top MIS Official	$1,185	$798	$794	$957	$913	$983	$1,160	$1,108	$985	$1,036	$806	$1,218	$1,025
Data Base Systems Manager				739	556								
Manager of Data Processing	789	676	699	787	686	701	692	739	692	787	791	863	809
Asst. Manager of Data Processing	714	578	525	763	647		658		623			823	
Manager/Supervisor of Computer System Analysis and Programming	795	768	860	773	657	862	728	924	752	784	804	939	732
Lead Systems Analyst & Programmer	690	509	682	652	610	712	646	830	621	660	603	732	667
Senior Systems Analyst & Programmer	605	496	549	611	537	602	554	607	574	598	577	661	604
Junior Systems Analyst & Programmer	470	481	411	466	462		507	545	420	441	495	541	484
Manager/Supervisor of Systems Analysis				702									
Lead Systems Analyst		645		689							628		
Senior Systems Analyst				608	634	576				557	570		
Junior Systems Analyst		408		502	460	480				482			
Manager/Supervisor of Systems Programming	769	718		679		749				813		795	
Lead Systems Programmer		628		658	645	611	574			724		757	
Senior Systems Programmer	480	586		643		511	529			634		691	590
Junior Systems Programmer	362	451		426		399				521		577	
Programmer Trainee		343	325										
Manager/Supervisor of Applications Programming	792		725	767	586		771		626		774	845	
Lead Applications Programmer	634	638	614	634	568	535	677		527	594	625	563	550
Senior Applications Programmer	622	487	528	500	519	484	655	634	501	460	537	533	495
Junior Applications Programmer	397	388	371	423	388	407	563		389	395	466	418	407
Applications Programmer Trainee	348	344		367		361	365				341	295	
Data Communications Manager		521		682									
Data Communications Analyst		410		558						602			
Data Communications Operator	413			407						391			
Data Center Manager		472		769	696	558	608		577	722		716	573
Manager/Supervisor of Computer Operations	574	534	516	578	520	418	513	472	535	564	506	564	451
Lead Computer Operator	413	365	411	423	364	332	382	423	347	416	371	469	384
Senior Computer Operator	378	331	367	380	352	324	370	413	328	387	364	385	333
Junior Computer Operator	285	250	344	326	310	221	314	311	279	347	283	351	275
Computer I/O Control Manager	336	423		427						324	395	327	385
Tape Librarian		310		383						356		343	
Data Entry Supervisor	456	442		399	415	381	306		337	381	412	402	
Lead Data Entry Operator	382	361	312	331	293	275	249	265	274	335	308	324	341
Senior Data Entry Operator	352	270	245	313	279	253	222	240	269		303	305	304
Junior Data Entry Operator		221		295	242	209	207	229	257	278	285	278	297
Project/Team Leader		515		690	675							749	
Information Center Manager		652		635									
Information Center Analyst/Trainer		529		453		485	537						
Manager of Microcomputers		469		550									
End User Specialist		467		597						425			
User Training Specialist		431		495						465		414	

NOTE: Blanks denote insufficient information.

Source: Association of Data Processing Services Organizations and Mercer-Meidinger-Hansen, Inc., ADAPSO Compensation Survey Results, 1987.

TABLE 114

MEAN AND MEDIAN ANNUAL SALARIES OF OPERATING SYSTEMS/SOFTWARE PROGRAMMER/ANALYSTS BY GEOGRAPHIC AREA AND LEVEL, JANUARY 1, 1987

GEOGRAPHIC AREA	LEAD/SPECIALIST		SENIOR		INTERMEDIATE		ASSOCIATE		TRAINEE	
	MEAN	MEDIAN	MEAN	MEDIAN	MEAN	MEDIAN	MEAN	MEDIAN	MEAN	MEDIAN
Northeast	$47,400	$47,300	$41,300	$40,700	$33,200	$33,000	$28,300	$27,100	$20,400	$19,700
Southeast	41,700	41,300	37,500	37,500	32,400	32,100	24,700	23,800	18,600	18,800
Midwest	40,500	39,500	38,300	37,000	33,600	33,000	30,200	29,700	23,700	25,200
Southwest	46,700	46,100	42,600	41,500	37,100	36,800	34,400	34,700	26,600	26,400
NW/Rocky Mts.	43,300	43,700	39,100	38,900	30,700	30,100				
Calif./Hawaii	47,000	46,800	40,700	40,100	35,500	35,000	30,700	28,800	22,800	20,600
Overall	43,900	43,000	39,700	38,700	33,400	33,000	27,600	26,300	23,800	25,200

TABLE 115

MEAN AND MEDIAN ANNUAL SALARIES OF APPLICATIONS PROGRAMMER/ANALYSTS BY GEOGRAPHIC AREA AND LEVEL, JANUARY 1, 1987

GEOGRAPHIC AREA	LEAD/SPECIALIST		SENIOR		INTERMEDIATE		ASSOCIATE		TRAINEE	
	MEAN	MEDIAN	MEAN	MEDIAN	MEAN	MEDIAN	MEAN	MEDIAN	MEAN	MEDIAN
Northeast	$39,100	$37,800	$35,300	$35,700	$29,300	$29,500	$24,700	$25,000	$20,700	$20,600
Southeast	35,100	35,400	31,500	31,200	26,700	26,500	21,500	21,200	17,500	17,000
Midwest	34,500	34,000	35,800	34,800	28,600	27,600	24,600	24,600	22,500	22,700
Southwest	39,100	39,000	36,300	36,500	28,900	28,000	24,700	24,600	22,300	22,200
NW/Rocky Mts.			37,800	37,200						
Calif./Hawaii	44,600	45,200	38,200	37,900	30,700	30,000	26,300	26,800	21,400	20,400
Overall	37,700	37,000	35,700	35,700	28,500	28,400	24,000	24,500	21,100	21,600

TABLE 116

MEAN AND MEDIAN ANNUAL SALARIES OF SOFTWARE DEVELOPMENT PROGRAMMER ANALYSTS BY GEOGRAPHIC AREA AND LEVEL, JANUARY 1, 1987

GEOGRAPHIC AREA	SENIOR		INTERMEDIATE		ASSOCIATE		TRAINEE	
	MEAN	MEDIAN	MEAN	MEDIAN	MEAN	MEDIAN	MEAN	MEDIAN
Northeast	$38,600	$38,800	$33,000	$33,100	$27,100	$26,600	$22,200	$19,900
Southeast	46,700	48,900	33,600	32,100	27,200	26,300	23,900	24,800
Midwest	41,500	39,900	34,800	34,600	28,600	27,300	20,600	19,200
Northwest/Rocky Mts.			36,400	36,400			28,500	28,500
Calif./Hawaii	57,400	57,000	48,100	50,000	41,000	42,600	24,400	23,400
Overall	43,500	42,400	35,900	35,000	29,500	28,100	24,800	27,000

SOURCE: Association of Data Processing Services Organizations, and Mercer-Meidinger-Hansen, Inc., 1985 ADAPSO Compensation Survey 1987.

TABLE 117

MEAN AND MEDIAN SALARIES OF TECHNICAL WRITERS BY GEOGRAPHIC AREA AND LEVEL, JANUARY 1, 1987

GEOGRAPHIC AREA	SENIOR		INTERMEDIATE		ASSOCIATE	
	MEAN	MEDIAN	MEAN	MEDIAN	MEAN	MEDIAN
Northeast	$31,300	$30,700	$24,700	$24,500	$21,500	$21,000
Southeast	31,200	31,500	26,900	28,000	22,600	20,700
Midwest	32,100	32,800	25,600	25,500	23,700	24,100
Southwest	32,600	32,800	25,100	24,900	20,900	20,300
Calif./Hawaii	36,800	37,200	34,700	35,800	22,800	20,300
Overall	32,400	32,000	26,100	26,000	22,100	21,000

TABLE 118

MEAN AND MEDIAN SALARIES OF CUSTOMER SERVICE REPRESENTATIVES BY GEORGRAPHIC AREA AND LEVEL, JANUARY 1, 1987

GEOGRAPHIC AREA	SENIOR		INTERMEDIATE		ASSOCIATE	
	MEAN	MEDIAN	MEAN	MEDIAN	MEAN	MEDIAN
Northeast	$31,200	$29,700	$22,000	$21,000	$19,000	$18,300
Southeast	30,100	31,000	22,500	22,100	22,700	20,600
Midwest	31,300	31,200	25,700	24,000	23,400	22,800
Southwest	37,400	36,900	28,100	28,000	19,800	19,300
Calif./Hawaii	42,200	43,300	32,800	33,100	24,600	23,700
Overall	33,500	32,300	25,600	24,400	21,400	20,100

TABLE 119

MEAN AND MEDIAN SALARIES OF CUSTOMER SUPPORT (TECH) REPRESENTATIVES BY GEOGRAPHIC AREA AND LEVEL, JANUARY 1, 1987

GEOGRAPHIC AREA	SENIOR		INTERMEDIATE		ASSOCIATE	
	MEAN	MEDIAN	MEAN	MEDIAN	MEAN	MEDIAN
Northeast	$38,100	$40,100	$33,100	$35,200	$27,000	$29,100
Southeast	35,300	36,000	26,800	27,300	23,100	23,400
Midwest	33,200	32,100	26,400	26,400	22,300	22,900
Southwest	42,500	43,600	34,800	34,900	24,800	24,800
Calif./Hawaii	33,600	33,600	27,600	27,300	23,000	22,600
Overall	35,000	34,700	28,700	28,200	23,200	23,000

SOURCE: Association of Data Processing Services Organizations and Mercer-Meidinger-Hansen, Inc., ADAPSO Compensation Survey Results, 1987.

TABLE 120

MEDIAN SALARIES OF DATA PROCESING PERSONNEL BY JOB TITLE AND GEOGRAPHICAL AREA, JANUARY 1, 1987

JOB TITLE	Total U.S.	GEOGRAPHICAL AREA					
		Northeast	Southeast	Midwest	Southwest	Northwest & Rocky Mt. Areas	California & Hawaii
Operating Systems/Software Programming Analysis Manager	$58,800	$57,100	$60,500	$54,300	$62,900	$	$62,000
Operating Systems/Software Programming/ Analysis Supervisor	49,000	49,000	51,500	45,100	50,000	50,400	53,600
Applications Programming/Analysis Manager	53,200	50,000	58,000	51,000	48,600		52,000
Applications Programming/Analysis Supervisor	44,200	41,100	49,000	40,200	42,900		49,000
Professional Services Project Manager	52,900	51,300	65,800	47,600	51,500		55,000
Computer Operations Manager	45,300	40,800	45,300	44,300	47,600	57,100	50,700
Internal MIS Manager	53,900	56,700	45,800	40,500	67,000		71,500
Systems Consultant/Customer Support Specialist	40,500	36,900	39,000	34,500	46,600		
Customer Support (Technical) Manager	43,500	41,400	47,400	39,800	50,000		44,400
Telecommunications Manager	54,000	52,800	54,000	47,700	51,900		52,200
Telecommunications Supervisor	39,500	42,600	51,000	36,300	36,000		46,700
Data Entry Supervisor	22,100	22,000	20,700	20,100	22,900		27,700
Data Processing Operations Supervisor	30,700	26,000	32,700	29,900	32,700	38,800	34,900
Operating Sys./Software Architect/Consultant	49,000	53,000	46,000	52,000	53,200		55,000
Applications Architect/Consultant	49,100	47,700	47,200	48,900	52,100		53,200
Software Development Architect/Consultant	48,700	45,900	53,000	49,400		59,700	48,800
Computer Operator - Senior	21,100	20,500	20,500	20,200	22,300	29,700	23,900
Computer Operator - Intermediate	18,100	17,000	18,000	17,700	18,600	25,100	20,500
Data Entry Operator - Senior	15,900	14,800	14,400	17,000			16,000
Data Entry Operator - Intermediate	12,700	11,600	12,300	14,500	13,000	18,300	14,800
Telecommunications Programmer/Analyst-Senior	38,100	37,500	41,500				
Telecommunications Programmer/Analyst-Intermediate	31,400	28,000	25,400	39,200			
Telecommunications Programmer/Analyst-Associate	28,500		22,600	32,200			

SOURCE: Administrative Management Society, Data Processing Salaries Report, 1987.

TABLE 121

AVERAGE SALARIES OF DATA PROCESSING PERSONNEL BY JOB POSITION, 1985 AND 1986

DATA PROCESSING POSITION	1986	1985	Percent Increase
MANAGEMENT - Total 3 Positions	**$42,600**	**$40,800**	**4.4**
Manager - Software Sys. Programming	44,600	42,800	4.2
Manager - Applications Programming	43,600	41,700	4.6
Manager - Computer Operations	39,500	38,000	4.0
PROFESSIONAL/SUPERVISORY - Total All 9 Positions	**31,600**	**30,500**	**3.6**
Database Administrator	39,200	37,400	4.8
Project Leader (Lead Programmer/ Analyst)	38,400	37,400	4.8
Senior Software Sys. Programmer	37,800	36,200	4.4
Sys. Analyst (Senior Programmer/ Analyst)	33,700	32,600	3.4
Software Sys. Programmer	31,400	30,500	3.0
Programmer/Analyst	28,700	27,400	4.7
Supervisor - Computer Operations	28,400	27,800	2.2
Programmer	23,500	22,800	3.1
Supervisor - Data Entry	23,200	22,100	5.0
STAFF - Total All 8 Positions	**16,900**	**16,600**	**1.8**
Lead Computer Operator	21,800	21,000	3.8
Computer Operator - Level A	18,900	18,400	2.7
Lead Data Entry Operator	17,500	16,800	4.2
Tape Librarian	16,000	16,400	*
Data Quality Control Clerk	16,200	16,300	*
Computer Operator - Level B	16,500	16,100	2.5
Data Entry Operator - Level A	14,700	14,400	2.1
Data Entry Operator - Level B	13,400	13,100	2.3

* Percent invalid due to substantial change in sample.

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TABLE 122

AVERAGE SALARIES OF DATA PROCESSING PERSONNEL BY TYPE OF INDUSTRY AND OCCUPATIONAL POSITION, 1986

POSITION	ALL	TYPE OF INDUSTRY						
		Manufacturing						
		Consumer	Industrial	Finan.	DP Services	Gov't	Trans/ Utilities	Education
CORPORATE STAFF								
Vice President	58,466	55,600	58,750	64,182	59,614	59,421	73,267	48,627
Director of DP/MIS	47,974	50,624	48,286	48,367	57,782	43,155	58,732	39,268
Technical Services Manager	45,192	42,356	43,076	51,020	47,667	42,115	49,000	
Information Center Manager	40,328	39,364	40,307	41,700	46,667	39,748	45,900	32,648
Director of Security	37,378	42,500	38,500	40,950	32,500	28,000		
SYSTEMS ANALYSIS								
Manager	40,353	38,400	36,738	49,200	40,345	41,385	42,575	35,000
Senior Systems Analyst	36,903	34,947	38,533	39,904	38,250	35,203	42,560	27,350
Lead Systems Analyst	34,850	33,198	36,934	40,000	35,667	34,235		33,200
Systems Analyst	29,632	26,613	27,934	34,825	32,667	29,633	35,500	26,667
Junior Systems Analyst	22,769	19,500	21,340		21,500	23,696	22,000	
APPLICATIONS PROGRAMMING								
Manager	41,121	38,759	42,728	43,317	41,333	41,370	25,000	27,500
Lead Application Programmer	33,167	32,433	27,725	36,229	40,000	34,014	35,100	25,500
Senior Application Programmer	30,824	27,013	29,963	32,680	33,000	31,133	32,075	27,213
Application Programmer	24,929	25,232	25,029	26,029	28,125	23,369	24,700	20,367
Intermediate Application Programmer	25,792	21,976	27,341	27,500	26,000	32,359		21,000
Junior Application Programmer	20,396	16,373	22,987	20,214	18,875	20,708	21,333	18,750
SYSTEMS ANALYSIS/PROGRAMMING								
Manager	43,312	42,673	39,287	42,823	47,977	40,514	56,933	37,233
Lead Systems Analyst/Programmer	36,548	32,243	34,929	35,165	40,495	37,566	46,632	30,044
Senior Systems Analyst/Programmer	33,207	32,313	33,604	32,200	34,035	32,687	37,569	24,431
Systems Analyst/Programmer	29,309	27,493	30,301	29,675	30,605	26,902	39,281	27,367
Intermed. Systems Analyst/Programmer	24,961	25,660	27,823	25,684	25,489	23,427	32,550	20,452
Junior Systems Analyst/Programmer	21,504	19,300	22,436	21,571	20,675	19,830	25,168	20,500
OPERATING SYSTEMS PROGRAMMING								
Manager	42,848	40,760	39,250	46,593	43,000	40,207	52,150	39,000
Senior Systems Programmer	38,759	35,203	38,115	37,363	42,500	36,470	46,100	
Intermediate Systems Programmer	30,558	27,217	32,683	31,948	35,000	29,438	37,100	21,775
Junior Systems Programmer	23,054	28,833	25,000	25,275	22,000	22,594	24,600	15,000
DATABASE ADMINISTRATION								
Manager	42,046	40,928	52,000		41,417	40,312	47,260	
Database Administrator	33,018	33,843	32,328	27,444	44,000	30,093	43,300	
DATACOM/TELECOM								
Manager	43,921	60,000	30,000	45,900	42,667	40,390	44,150	
Analyst	31,264	32,043	31,280	28.616	40,000	27,424	36,063	18,720
COMPUTER OPERATIONS								
Manager	30,087	31,847	29,638	32,232	30,167	28,694	33,256	26,517
Shift Supervisor	25,022	24,151	25,930	24,600	30,000	24,412	31,057	23,000
Lead Computer Operator	19,860	20,892	19,790	20,899	21,667	19,939	22,242	18,114
Computer Operator	16,865	16,692	17,395	17,537	16,800	17,091	18,060	16,267
Magnetic Media Librarian	16,613	15,375	17,500	15,667	18,500	17,590		
PRODUCTION AND I/O CONTROL								
Supervisor	27,019	22,500	27,375	31,860	23,500	24,540	52,600	
Lead Production Controller	22,935	18,993	23,125	21,500	20,000	18,098	36,600	12,000
Scheduler	21,060	16,700	25,000	22,000	24,000	18,546		
Control Clerk	15,894	15,850	14,714	17,632	18,000	16,455	18,622	15,002
DATA ENTRY								
Supervisor	19,708	21,072	17,738	23,700	23,600	18,453	25,500	19,833
Operator	14,782	14,485	15,476	15,243	15,333	14,061	17,923	12,000
OFFICE AUTOMATION								
Word Processing Supervisor	25,092	30,000	36,100	23,125	22,000	26,360	18,250	18,594
Word Processing Operator	15,888	20,000	15,173	16,861	16,250	13,944	17,820	10,377
Micro. User Services Specialist	22,969	25,277	24,800	15,000	15,000	21,139	30,000	22,333
DOCUMENTATION								
Specialists	22,318	20,611	27,300		21,000	18,381	16,100	15,000
Consultants	34,421	43,034	35,000	27,600	46,000	23,843		23,800
PC Evaluator	23,279	15,000	25,000	24,000		21,255		

NOTE: Blanks indicate insufficient data.

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TABLE 123

AVERAGE SALARIES OF DATA PROCESSING PERSONNEL BY POSITION & SELECTED GEOGRAPHIC REGIONS, 1986

POSITION	ALL	GEOGRAPHIC REGIONS						
		Boston	NYC Area	Phila.	Wash./ Balt.	Atlanta	Denver	Houston
CORPORATE STAFF								
Vice President	58,466	69,471	43,750	56,429	53,800	62,000	57,314	53,750
Director of DP/MIS	47,974	55,916	40,733	49,893	53,582	48,854	51,640	56,289
Technical Services Manager	45,192	50,750	42,000	41,600	50,300	37,500	38,000	45,283
Information Center Manager	40,328	45,950	45,060	42,167	40,996	34,500		42,500
Director of Security	37,378				31,000	30,000		
SYSTEMS ANALYSIS								
Manager	40,353	39,081	29,750	46,600	45,782	34,225	42,250	46,000
Senior Systems Analyst	36,903	38,179	31,667	34,500	39,878	34,000	39,467	44,500
Lead Systems Analyst	34,850	36,500		31,000	36,146	32,000	33,200	41,900
Systems Analyst	29,632	28,667	32,000	28,267	30,063	28,931	33,000	38,000
Junior Systems Analyst	22,769	19,500			22,000	22,000	22,000	
APPLICATIONS PROGRAMMING								
Manager	41,121	39,675		41,200	48,457	30,250	44,500	39,746
Lead Application Programmer	33,167	32,475	25,000	31,125	38,355	38,333	34,500	56,200
Senior Application Programmer	30,824	28,000	28,100	32,286	33,383		31,500	38,875
Application Programmer	24,929	22,625	26,045	27,500	25,904	26,900	27,000	25,362
Intermediate Application Programmer	25,792	19,000	19,200	27,250	23,397	18,000	22,000	
Junior Application Programmer	20,396	22,000	19,000	20,400	18,407	19,653		28,200
SYSTEMS ANALYSIS/PROGRAMMING								
Manager	43,312	47,160	49,400	38,763	46,100	35,967	42,000	47,250
Lead Systems Analyst/Programmer	36,548	38,100	46,314	34,500	39,224	36,000	37,857	35,000
Senior Systems Analyst/Programmer	33,207	33,975	36,470	31,143	36,900	36,320	31,000	35,250
Systems Analyst/Programmer	29,309	29,733	30,653	26,188	34,100	33,000	29,590	29,250
Intermed. Systems Analyst/Programmer	24,961	28,300		22,900	26,650	27,100	27,457	25,500
Junior Systems Analyst/Programmer	21,504	22,733	25,635	17,167	22,800	21,500	24,026	23,000
OPERATING SYSTEMS PROGRAMMING								
Manager	42,848	45,950	38,000	46,000	42,000		49,000	
Senior Systems Programmer	38,759	42,700	35,000	36,025	42,783	37,960	34,486	41,500
Intermediate Systems Programmer	30,558	37,100		26,575	42,000	28,300	30,500	23,000
Junior Systems Programmer	23,054	31,200		19,500	23,773			
DATABASE ADMINISTRATION								
Manager	42,046	38,600	27,500	47,550	43,724		35,000	51,000
Database Administrator	33,018	33,900	55,000	32,000	26,667	30,000	30,806	32,000
DATACOM/TELECOM								
Manager	43,921	44,650	38,000				37,000	
Analyst	31,264	41,600	42,000	40,000	35,363	27,000	26,500	
COMPUTER OPERATIONS								
Manager	30,087	35,010	29,832	33,922	37,955	29,875	32,150	39,000
Shift Supervisor	25,022	31,400	26,450	26,375	27,400	20,667	26,440	26,250
Lead Computer Operator	19,860	22,792	22,600	20,210	21,110	16,800	21,250	20,333
Computer Operator	16,885	18,444	18,202	17,098	17,522	15,639	16,528	18,422
Magnetic Media Librarian	16,613		18,000	12,000	18,000	15,000		23,200
PRODUCTION AND I/O CONTROL								
Supervisor	27,019	35,867		26,000	31,467	20,000	28,000	
Lead Production Controller	22,935	27,800	30,000		18,000		22,000	
Scheduler	21,060			29,000	28,000		18,500	20,000
Control Clerk	15,894	16,033	14,067	14,344	18,933	18,500	17,480	23,000
DATA ENTRY								
Supervisor	19,708	19,029	20,750	20,167	31,367	13,000	19,944	15,000
Operator	14,782	14,512	15,317	14,655	16,244	12,632	12,143	15,974
OFFICE AUTOMATION								
Word Processing Supervisor	25,092	29,625			25,000	18,000	17,999	26,000
Word Processing Operator	15,888	15,545	14,750		16,000	16,000	15,652	19,550
Micro. User Services Specialist	22,969	20,667	25,000	29,750	20,667	20,000		20,000
DOCUMENTATION								
Specialists	22,318	19,483		34,000	19,805	25,000	12,000	25,500
Consultants	34,421	31,000	36,000			26,000	27,550	35,000
PC Evaluator	23,279	15,000		30,000	30,000		26,000	25,000

NOTE: Blanks indicate insufficient data.

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TABLE 123 (continued)

AVERAGE SALARIES OF DATA PROCESSING PERSONNEL BY POSITION & SELECTED GEOGRAPHIC REGIONS, 1986

POSITION	GEOGRAPHIC REGIONS							
	Dallas	Chicago	Cleveland	Cinn./ Col.	Detroit	St. Louis	San Francisco	Los Angeles
CORPORATE STAFF								
Vice President	75,000	62,500		57,793	62,333	71,500	51,833	64,159
Director of DP/MIS	51,689	42,333	46,667	43,272	54,900	47,743	53,360	51,507
Technical Services Manager	48,567	46,333	50,760	37,000	54,667	54,000	32,500	47,561
Information Center Manager	33,350	38,667	40,000	30,000	43,200	47,333	40,800	44,188
Director of Security						55,000		
SYSTEMS ANALYSIS								
Manager	40,900	44,333	43,860		45,000	43,750	33,036	45,188
Senior Systems Analyst	42,600	32,729	35,000	38,398	37,667	40,250	34,400	40,677
Lead Systems Analyst	36,000	36,735		30,000		26,000	42,500	39,969
Systems Analyst	29,000	32,750	33,600		34,000	25,000	28,000	30,684
Junior Systems Analyst	30,000	20,000				20,000		24,900
APPLICATIONS PROGRAMMING								
Manager	55,333	41,000	42,840	53,712		38,000	40,000	39,051
Lead Application Programmer	38,167	35,500	30,800		29,500	33,000	24,000	42,500
Senior Application Programmer	29,575	28,000		34,898	29,250	31,642	34,500	35,625
Application Programmer	24,120	24,067	23,150	40,416	22,667	23,344	36,750	26,535
Intermediate Application Programmer		23,333	32,000	36,204		24,200	33,250	29,000
Junior Application Programmer	23,000	21,833		32,700	18,000	16,500	26,250	20,675
SYSTEMS ANALYSIS/PROGRAMMING								
Manager	30,000	40,000	33,000	39,700	54,000	43,000	56,667	47,110
Lead Systems Analyst/Programmer	38,200	31,000	26,000	30,000	38,400	32,525	37,290	42,258
Senior Systems Analyst/Programmer	25,000	28,500	18,000	29,449	36,363	36,275	36,341	38,941
Systems Analyst/Programmer	35,000	28,000		29,305	30,650	27,175	33,516	34,397
Intermed. Systems Analyst/Programmer	26,500	21,060	14,000	36,204	24,258	21,000	24,000	29,614
Junior Systems Analyst/Programmer	23,500	24,000		20,000	29,000	18,800	23,000	25,918
OPERATING SYSTEMS PROGRAMMING								
Manager	35,000	37,500		40,000		39,000	54,000	47,647
Senior Systems Programmer	37,000	34,000	46,200	40,000	47,805	43,200	32,000	41,854
Intermediate Systems Programmer			30,000	35,208	42,000	27,000		38,330
Junior Systems Programmer	28,000	16,000		20,000	38,000	10,400	23,000	30,471
DATABASE ADMINISTRATION								
Manager	60,000	37,000	45,000		54,000	38,000	42,500	46,970
Database Administrator		24,500	32,500	44,796	39,500	30,000	31,000	39,903
DATACOM/TELECOM								
Manager	30,000					60,000	70,000	43,593
Analyst	50,000	24,360		18,800	39,000	38,025	40,000	31,674
COMPUTER OPERATIONS								
Manager	26,500	27,545	24,200	33,800	28,750	30,220	27,500	35,978
Shift Supervisor	23,333	17,400	15,000	33,102	24,867	19,250	28,279	26,675
Lead Computer Operator	21,600	19,133	17,667	16,500	20,333	18,150	21,500	21,649
Computer Operator	17,500	16,610	16,225	17,365	19,456	15,175	18,589	19,772
Magnetic Media Librarian			17,500		21,000	15,000		22,500
PRODUCTION AND I/O CONTROL								
Supervisor	28,000	17,300			22,667	26,500	40,000	25,837
Lead Production Controller	22,750	30,000			22,000			26,076
Scheduler	25,000				24,000			20,975
Control Clerk		15,625	15,720		15,501	15,400	15,350	19,233
DATA ENTRY								
Supervisor	15,625	23,500	17,750	17,000	28,000	18,417	20,557	22,517
Operator	13,167	18,125	13,667	15,000	16,060	13,463	16,746	16,970
OFFICE AUTOMATION								
Word Processing Supervisor	27,000					24,125	21,500	20,674
Word Processing Operator		12,275	13,500		15,000	16,000	22,750	16,855
Micro. User Services Specialist	16,000	19,167			34,000	28,000		
DOCUMENTATION								
Specialists	29,000		22,000			16,100	16,500	24,000
Consultants	48,000	40,000	45,000	24,000		18,000	42,667	34,000
PC Evaluator								

NOTE: Blanks indicate insufficient data.

Source: Source EDP, 1987 Computer Salary Survey and Career Planning Guide.

TABLE 124

MEDIAN COMPENSATION OF NON-MANAGEMENT COMPUTER PROFESSIONALS BY POSITION AND LENGTH OF EXPERIENCE, 1987

NON-MANAGEMENT POSITIONS	LENGTH OF EXPERIENCE				
	1 Years- 2 Years	2 Years- 5 Years	5 Years- 7 Years	Over 5 Years	Over 7 Years
Commercial Programmers and Programmer Analysts	$22,500	$27,800	$	$33,000	$
Scientific/Engineering Programmers & Programmer Analysts	25,000	30,000		38,000	
Personal Computer/Microprocessor Programmers and Analysts	22,000	28,000		35,000	
Minicomputer Programmers & Programmer Analysts	21,700	27,500		33,000	
Systems (Software) Programmers	27,200	33,000	38,000		42,000
Software Engineers	27,000	32,000	38,000		43,000
Data Base Analysts/Data Management Specialists	26,000	35,000	40,000		44,500
Communications Analysts/Technical Specialists	26,000	37,000		43,000	
Information Center/Office Automation/ Decision Support Specialists	24,100	30,000		37,500	
EDP Auditors	25,000	31,000	36,000		42,000
Technical Writers and Editors	22,000	28,000	31,000		34,000
Senior Analysts, Project Leaders & Consultants		33,000	37,700		42,000
Computer Operators	18,000	21,000		25,600	

TABLE 125

MEDIAN COMPENSATION OF MANAGEMENT COMPUTER PROFESSIONALS BY POSITION AND SIZE OF COMPUTER SYSTEM, 1987

MANAGEMENT POSITION	SIZE OF COMPUTER SYSTEM		
	SMALL	MEDIUM	LARGE
Technical Services Managers	$37,800	$46,000	$52,500
Systems & Project Programming Mgrs.	40,000	46,700	55,000
Data Center Operations Managers	28,000	36,000	43,500
Computing Systems Directors	42,000	54,500	66,000

Source: Hay Group, Inc., EDP Compensation Comparison, 1986.

TABLE 126

AVERAGE BASE SALARY AND TOTAL COMPENSATION OF EDP PROFESSIONALS BY CONTENT LEVEL (RESPONSIBILITY) AND REGION, 1986

REGION	JOB CONTENT LEVEL					
	ENTRY LEVEL DEGREED PROFESSIONAL		SENIOR INDIVIDUAL CONTRIBUTOR LEVEL		SECOND LEVEL OF MGMT/ SENIOR MANAGER LEVEL	
	Salary	Compensation	Salary	Compensation	Salary	Compensation
New England	$22,800	$23,000	$36,900	$37,300	$65,400	$67,000
Metropolitan New York	26,900	27,200	45,100	45,800	76,800	84,400
Philadelphia/D.C.	25,900	25,900	39,300	39,300	70,600	74,100
Ohio/Western Penna.	23,500	23,500	38,300	38,300	70,300	73,300
Southeast	22,900	23,000	38,400	38,500	65,000	67,200
Midwest	24,600	24,700	37,700	38,100	67,700	70,700
Metropolitan Chicago	23,700	23,800	39,000	39,300	62,900	67,000
West/Northwest	26,700	26,700	40,900	40,900	68,200	70,800
Southwest	25,900	25,900	42,200	43,000	72,100	74,100

TABLE 127

AVERAGE BASE SALARY AND TOTAL COMPENSATION OF EDP PROFESSIONALS BY CONTENT LEVEL (RESPONSIBILITY) AND INDUSTRY, 1986

INDUSTRY	JOB CONTENT LEVEL					
	ENTRY LEVEL DEGREED PROFESSIONAL		SENIOR INDIVIDUAL CONTRIBUTOR LEVEL		SECOND LEVEL OF MGMT/ SENIOR MANAGER LEVEL	
	Salary	Compensation	Salary	Compensation	Salary	Compensation
Manufacturing	$26,000	$26,200	$41,500	$41,900	$70,400	$75,700
Nonmanufacturing	23,700	23,700	39,400	40,100	70,100	80,600
Utilitites/Transportation	26,900	26,900	42,100	42,100	72,200	73,800
Petroleum/Gas	29,400	29,400	49,000	49,000	78,500	80,100
Chemical/Pharmaceutical	26,700	27,000	41,800	42,900	74,400	80,600
Blue Cross/Blue Shield Plans	23,400	23,400	37,900	37,900	64,600	64,700
Service/Nonprofit	23,600	23,600	38,100	38,100	61,400	61,400
Diversified Financial	22,700	22,700	38,700	38,900	65,500	69,100
Insurance	23,300	23,400	36,400	37,200	64,900	68,700
Banks	21,600	21,900	35,800	36,100	71,300	73,500

SOURCE: U. S. Department of HHS, Public Health Service, Position Classification and Pay in State and Territorial Public Health Laboratories, September 1985

TABLE 128

AVERAGE ANNUAL SALARIES FOR SELECTED POSITIONS IN STATE AND TERRITORIAL PUBLIC HEALTH LABORATORIES BY STATE, 1985

STATE	POSITION					
	Laboratory Aide I	Laboratory Technician I	Micro-Biologist I	Chemist I	Asst. Lab. Director	Lab. Director
Alabama	$	$14,854	$21,380	$	$38,597	$50,661
Alaska		19,152	31,878			60,060
Arizona		14,842		19,466		42,519
Arkansas	9,898	11,406	14,482	14,482	27,248	28,821
California	14,754	18,624	17,874	21,768	43,686	59,604
Colorado	11,820	15,840	20,760	26,502		51,048
Connecticut	13,359	15,457	17,563	17,563	43,609	53,059
Delaware	9,821	10,861	17,604	19,063		44,192
D. C.	10,271	15,263	19,554	17,655	41,062	48,817
Florida	8,227	11,390	15,013	15,921	28,104	31,500
Georgia	10,905	14,307	18,087	18,087	35,520	60,840
Hawaii	13,506	15,426				37,092
Idaho	11,379	13,164	17,643	17,643		42,490
Illinois	12,972	14,346	17,916	18,636		40,380
Indiana	11,713	13,234	18,447	18,447		47,242
Iowa	9,914	13,516	18,570	18,570	44,385	43,540
Kansas		11,850	20,760	20,760		47,982
Kentucky	9,906	13,272	19,608	19,608		71,300
Louisiana	9,822	12,312	18,276	18,276	26,658	43,808
Maine	11,720	13,488	17,087	17,805	28,434	30,815
Maryland		11,235	15,559	15,559	35,344	48,800
Massachusetts	11,995	16,329	22,396	22,396	38,807	41,824
Michigan		18,755	19,326	19,326	51,390	55,358
Minnesota	14,034	16,578			39,306	46,792
Mississippi	8,734		16,530	18,273	27,634	32,090
Missouri	9,876	13,554	17,124	17,124	28,686	34,284
Montana	12,525	15,494	17,980	17,980		29,610
Nebraska		13,254	19,028	19,028		33,938
Nevada	13,245	16,542				
New Hampshire	9,847	13,396	15,337		22,844	26,744
New Jersey	9,645	14,249	16,343	16,343		45,094
New Mexico	10,680		18,282	18,282	34,470	36,552
New York						
North Carolina	12,150	15,780	19,698	18,852	36,174	45,876
North Dakota	8,652	11,046	18,930	18,930	29,358	33,984
Ohio	12,532	14,269	17,222	17,222	30,160	33,186
Oklahoma	10,125	14,247	22,641			43,760
Oregon	11,544	15,138			27,462	36,864
Pennsylvania	11,922	14,718	20,371	20,371	34,396	40,860
Rhode Island	12,763	15,194	17,857	18,471	32,939	40,319
South Carolina	10,326	13,119	17,882	19,343	29,779	62,727
South Dakota	8,861	12,012	16,608	16,608		30,742
Tennessee	9,714	10,674	16,830	16,794		38,826
Texas	12,000	15,390	19,926	19,926	44,796	47,112
Utah	13,154	16,589	20,504	20,070		46,134
Vermont		13,800	16,692	16,692	26,780	35,776
Virginia	8,826	10,543	18,002	19,674	28,108	33,589
Washington	11,904	16,824	19,512	21,534		43,002
West Virginia	11,250		19,212	19,212	26,592	40,632
Wisconsin	14,701	14,386	19,411	19,411		54,500
Wyoming	13,056	18,324			32,904	43,110
Guam	9,322	10,528	14,840	14,840	19,910	22,640
Puerto Rico	5,484		9,180	9,420		21,360
Virgin Islands	7,003	9,847	11,137			21,569

NOTE: Blanks indicate no position reported.

SOURCE: U.S. Department of HHS, Public Health Service, *Position Classification and Pay in State and Territorial Public Health Laboratories*, September 1985

TABLE 129

AVERAGE ANNUAL SALARIES OF SELECTED POSITIONS IN STATE AND TERRITORIAL PUBLIC HEALTH LABORATORIES, 1980 AND 1985

POSITION CLASSIFICATION	AVERAGE ANNUAL SALARIES		% Increase
	1980	1985	1980-85
Lab Aide I	$ 8,187	$11,081	35.4
Lab Aide II	9,092	12,411	36.5
Lab Technician I	10,203	14,238	39.6
Lab Technician II	11,743	16,053	36.7
Microbiologist I	13,582	18,339	35.0
Microbiologist II	15,490	21,019	35.7
Microbiologist III	17,977	24,060	33.8
Microbiologist IV	20,876	27,541	31.9
Microbiologist V	22,723	31,326	37.9
Chemist I	13,662	18,463	35.1
Chemist II	15,984	21,301	33.3
Chemist III	17,906	24,920	39.2
Chemist IV	20,826	27,215	30.7
Chemist V	23,344	32,210	38.0
Asst. Lab. Director	24,932	33,292	33.5
Lab. Director	30,882	42,133	36.4

SOURCE: Abbott, Langer and Associates, Compensation in the Accounting/Financial Field, 8th Edition, 1987.

TABLE 130

MEAN AND MEDIAN ANNUAL SALARIES OF ACCOUNTING/FINANCIAL PERSONNEL BY TYPE OF ORGANIZATION AND POSITION, JANUARY 1987

TYPE OF ORGANIZATION	Accountants & Auditors		Chief Corporate Financial Officers		Corporate Comptrollers		Accounting Auditing Managers		Supervisory Accountants & Auditors	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median
All Manufacturing/Extractive Organizations	$26,355	$26,460	$67,447	$63,500	$45,761	$45,800	$37,955	$37,426	$31,527	$31,687
All Non-Manufacturing Organizations*	22,652	22,828	71,745	68,550	49,823	49,783	35,266	35,094	28,574	27,430
Accounting Firms (Public)	20,452	20,400					38,207	37,174	30,790	29,972
Aerospace/Aircraft Product Mfg.	27,592	27,360					40,597	42,420		
Banks and Other Financial Organizations	19,220	19,054	77,632	65,500	52,960	57,000	31,933	31,799	23,666	24,000
Chemical/Pharmaceutical/Plastic/Rubber Product Mfg.	26,400	25,450					44,500	44,505		
Educational Institutions							36,472	37,178		
Electrical/Electronics Product Mfg.	25,159	25,000	67,583	65,500	51,840	53,000			31,567	32,512
Fabricated Metal Product Mfg.	24,893	24,600	63,430	57,660			36,068	37,275	32,018	30,200
Food/Beverage/Tobacco Product Mfg.	27,163	24,200					39,409	30,000	33,809	34,800
Governmental Organizations (federal, state, local)	20,721	20,514					27,567	26,182	27,552	27,092
Health Services (Hospitals/Nursing Homes/etc.)	24,913	26,812	74,292	56,775	44,640	42,000	32,532	31,200		
Insurance Firms	24,724	24,222			61,631	56,355	41,223	42,739	32,668	32,559
Merchandising Firms (Retail & Wholesale)	22,742	23,000	71,385	64,850	37,063	37,610	37,769	37,362	29,660	29,406
Metals/Minerals--Extracting/Refining	26,812	27,010					39,796	39,500	33,603	33,360
Transportation	22,672	20,000	63,000	56,000			35,167	35,700	26,548	25,742
Utilities							46,735	45,420	32,604	31,650

* Excludes accounting firms, banks and financial organizations.

SOURCE: Abbott, Langer and Associates, Compensation in the Accounting/Financial Field, 8th Edition, 1987.

TABLE 131

MEAN AND MEDIAN ANNUAL SALARIES OF ACCOUNTING/FINANCIAL PERSONNEL BY GEOGRAPHIC AREA AND POSITION, JANUARY 1987

GEOGRAPHIC AREA	Accountants & Auditors		Chief Corporate Financial Officers		Corporate Comptrollers		Accounting Auditing Managers		Supervisory Accountants & Auditors	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median
New York City (NY/NJ) & Vicinity	$23,287	$22,724	$87,383	$88,700	$56,799	$50,000	$40,931	$42,302	$31,949	$31,954
Philadelphia (PA/NJ) & Vicinity	22,001	22,193	110,007	100,000	57,660	59,250	36,987	35,886	28,897	29,000
Northeastern States-Total	**23,043**	**23,000**	**81,011**	**77,136**	**54,226**	**49,600**	**38,426**	**38,844**	**30,803**	**30,874**
Washington/Baltimore (DC/MD/VA) & Vicinity	20,291	17,600	89,614	80,000			32,885	30,158	29,937	29,492
Southern States-Total	**22,003**	**21,000**	**68,535**	**59,000**	**44,464**	**39,608**	**34,849**	**35,000**	**29,954**	**29,492**
Chicago (Il/IN) & Vicinity	25,047	23,192					37,849	31,500	28,877	26,600
Cincinnati (OH/KY/IN) & Vicinity	24,479	24,635					31,623	29,000	31,414	30,200
Cleveland (OH) & Vicinity	26,783	27,864	86,984	78,460			38,521	40,250	29,228	27,720
Detroit (MI) & Vicinity	27,772	26,900					42,983	44,500	36,388	37,000
Midwestern States-All Areas	**24,665**	**24,307**	**72,945**	**75,000**	**49,744**	**54,570**	**35,502**	**35,672**	**30,865**	**30,600**
Kansas City (MO/KS) & Vicinity	27,230	26,860					42,290	39,770	30,704	30,150
Milwaukee (WI) & Vicinity	18,156	19,884					36,011	39,000	31,297	29,275
Minneapolis/St. Paul (MN/WI) & Vicinity	23,287	22,724					34,463	35,900	28,601	28,537
North Central States-All Areas	**21,103**	**19,700**	**90,000**	**87,500**	**45,156**	**42,370**	**35,232**	**35,950**	**28,266**	**28,250**
Phoenix (AZ) & Vicinity	21,976	21,900							24,315	23,700
Southwestern States	**20,888**	**20,514**	**59,975**	**59,700**			**29,801**	**26,182**	**25,378**	**25,662**
Denver/Colorado Springs (CO) & Vicinity	22,134	24,585					43,014	44,940	30,757	34,044
Mountain States							**41,095**	**40,470**	**27,603**	**25,199**
Los Angeles/Long Beach (CA) & Vicinity	23,879	22,800	83,583	81,000			43,600	43,200	33,337	33,000
San Diego (CA) & Vicinity	24,546	26,200					38,316	40,000		
San Francisco/Oakland (CA) & Vicinity	24,200	24,700					39,200	38,000	30,288	30,000
Pacific States-Total	**24,235**	**23,757**	**58,469**	**55,000**	**46,711**	**45,800**	**40,962**	**41,400**	**32,519**	**30,300**
ALL AREAS	**22,608**	**22,200**	**70,957**	**67,400**	**49,002**	**47,129**	**36,540**	**36,002**	**29,808**	**29,432**

SOURCE: Abbott, Langer and Associates, Compensation in the Accounting/Financial Field, 8th Edition, 1987.

TABLE 132

MEAN AND MEDIAN ANNUAL SALARIES OF ACCOUNTING/FINANCIAL PERSONNEL BY LEVEL OF EDUCATION AND POSITION, JANUARY 1987

LEVEL OF EDUCATION	Accountants & Auditors		Chief Corporate Financial Officers		Corporate Comptrollers		Accounting & Auditing Managers		Supervisory Accountants & Auditors	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median
Less than BA/BS/BBA	$23,405	$24,000	$	$	$35,571	$30,000	$33,667	$33,750	$28,883	$28,000
BA/BS/BBA Degree	22,747	22,145	69,798	69,000	47,854	45,800	37,329	36,300	30,680	30,000
MA/MS Degree	25,210	25,130	63,708	59,400	56,111	52,000	43,003	42,500	35,575	36,000
MBA Degree	25,213	24,000	69,900	65,000	52,272	53,785	42,087	42,000	33,490	33,500

Source: U.S. Department of Labor, Bureau of Labor Statistics, "Weekly Earnings of Wage & Salary Workers" Fourth Quarter

TABLE 133

NUMBER AND MEDIAN WEEKLY EARNINGS BY SEX FOR SELECTED OCCUPATIONS, FOURTH QUARTER, 1986

OCCUPATION	TOTAL		MEN		WOMEN	
	Number of Workers	Median Weekly Earnings	Number of Workers	Median Weekly Earnings	Number of Workers	Median Weekly Earnings
MANAGERIAL & PROFESSIONAL	20,532,000	$511	11,566,000	$610	8,966,000	$424
Executive, Administrative & Managerial	10,121,000	514	6,110,000	623	4,012,000	405
Professional	10,411,000	508	5,456,000	599	4,955,000	445
TECHNICAL, SALES & ADMINIS. SUPPORT	24,217,000	327	9,048,000	449	15,170,000	290
Technicians & Related Support	2,828,000	435	1,549,000	505	1,279,000	360
Sales Occupations	7,306,000	354	4,396,009	454	2,910,000	243
Administrative Support, Including Clerical	14,083,000	308	3,103,000	413	10,980,000	291

SOURCE: U.S. Department of Labor, Bureau of Labor Statistics, Monthly Labor Review, June 1987.

TABLE 134

MEDIAN WEEKLY EARNINGS OF FULL-TIME WAGE AND SALARY WORKERS BY SEX IN OCCUPATIONS EMPLOYING 50,000 OR MORE, 1986

(numbers in thousands)

OCCUPATION	BOTH SEXES		MEN		WOMEN	
	No. of Workers	Median Weekly Earnings	No. of Workers	Median Weekly Earnings	No. of Workers	Median Weekly Earnings
Managerial & professional speciality occupations	20,095	$505	11,333	$608	8,762	$414
Executive, administrative, and managerial occupations	9,777	511	5,980	620	3,797	395
Administrators and officials, public administration	434	513	259	617	176	414
Financial managers	396	584	245	703	150	458
Personal & labor relations managers	109	621	57	759	52	474
Managers, marketing, advertising & public relations	421	680	320	751	101	470
Administrators, education & related fields	440	610	255	691	185	495
Managers, medicine & health	113	503	45	*	67	463
Management related occupations	3,004	474	1,592	565	1,412	390
Accountants & auditors	1,083	478	589	554	493	398
Management analysts	102	567	63	673	40	*
Personnel, training, & labor relations specialists	327	485	148	606	179	411
Professional speciality occupations	10,317	500	5,353	599	4,965	428
Engineers, architects, & surveyors	1,751	676	1,636	685	115	551
Architects	87	577	77	592	10	*
Engineers	1,644	682	1,540	691	104	580
Aerospace engineers	95	708	91	722	4	*
Chemical engineers	55	721	49	*	6	*
Civil engineers	209	618	202	620	7	*
Electrical & electronic engineers	511	704	471	715	40	*
Industrial engineers	191	628	173	647	19	*
Mechanical engineers	283	687	272	695	11	*
Mathematical & computer scientists	588	628	375	696	213	521
Computer systems analysts & scientists	337	631	219	687	118	537
Operations & systems researchers & analysts	203	617	127	695	77	511
Natural scientists	339	570	265	603	74	471
Chemists, except biochemists	116	601	92	624	24	*
Biological & life scientists	59	503	37	*	22	*
Health diagnosing occupations	254	653	188	722	66	499
Physicians	219	653	160	728	59	505
Health assessment & treating occupations	1,464	456	243	497	1,220	449
Registered nurses	1,068	460	84	490	984	458
Pharmacists	109	607	71	613	38	*
Dietitians	53	336	3	*	50	342
Therapists	195	404	58	415	136	400
Inhalation therapists	64	386	28	*	36	*

SOURCE: U.S. Department of Labor, Bureau of Labor Statistics, Monthly Labor Review, June 1987.

TABLE 134 (Continued)

MEDIAN WEEKLY EARNINGS OF FULL-TIME WAGE AND SALARY WORKERS BY SEX IN OCCUPATIONS EMPLOYING 50,000 OR MORE, 1986

(numbers in thousands)

OCCUPATION	BOTH SEXES		MEN		WOMEN	
	No. of Workers	Median Weekly Earnings	No. of Workers	Median Weekly Earnings	No. of Workers	Median Weekly Earnings
Teachers, college & university	443	600	322	656	122	479
Teachers, except college & university	2,884	437	836	501	2,048	411
Teachers, prekindergarten & kindergarten	240	274	4	*	236	279
Teachers, elementary school	1,173	422	172	490	1,001	415
Teachers, secondary school	1,076	481	518	508	558	443
Teachers, special education	198	424	29	*	169	417
Counselors, educational & voc.	146	494	72	535	74	471
Librarians, archivists, & curators	150	425	27	*	123	410
Librarians	139	423	21	*	118	408
Social scientists & urban planners	229	569	131	683	98	470
Economists	96	704	59	794	37	*
Psychologists	100	491	51	581	49	*
Social, recreation, & religious workers	750	389	413	420	337	350
Social workers	423	399	163	451	260	369
Lawyers & judges	342	767	256	812	85	609
Lawyers	314	767	234	806	79	624
Technical, sales & administrative support occupations	24,060	320	8,977	437	15,083	282
Technicians & related support occupations	2,821	416	1,597	490	1,224	343
Health technologists & technicians	852	328	167	405	685	317
Clinical laboratory technologists & technicians	239	388	68	436	170	371
Radiologic technicians	94	383	32	*	62	367
Licensed practical nurses	281	300	9	*	272	299
Engineering & related technologists & technicians	843	447	699	471	144	356
Electrical & electronic technicians	303	477	265	493	38	*
Drafting occupations	248	412	198	431	50	351
Surveying & mapping technicians	74	381	67	375	6	*
Science technicians	178	423	133	479	45	*
Chemical technicians	72	459	57	486	16	*
Technicians, except health, engineering & science	949	499	598	548	351	424
Computer programmers	503	519	332	559	172	477
Administrative support occupations, including clerical	13,844	300	3,006	403	10,838	284
Computer equipment operators	722	318	236	396	486	296
Computer operators	716	318	234	396	482	296

*Insufficient data.

SALARIES OF ENGINEERS

Salaries of engineers employed in industry increased 3.1% from 1986 to 1987, according to the 21st survey by the **Engineering Manpower Commission** of the **American Association of Engineering Societies.** Salaries paid to newly employed engineers with less than one year of experience increased 3.3%. As in previous years, engineers employed in industry reported the highest median salaries. Those engineers employed in industry, regardless of sector, earned more than engineers employed in government. Although an exact correlation cannot be made with those engineers employed in education, since that area was not surveyd in 1987, engineers in education have traditionally earned lower salaries (Tables 135, 136 and 137).

By type of industry, engineers working in the petroleum industry command the highest salaries, while those working in the non-electrical machinery industry earn the least (Table 135). This holds true regardless of experience level as shown in Table 137).

As expected, those engineers possessing a higher degree earn higher salaries. Median salaries paid to holders of Ph.D.s were 13.0% higher than those paid to master's degree holders while the median salary paid to master's degree engineers was 16.4% higher than that paid to bachelor's degree engineers (Table 138).

Engineers' salaries are not uniform throughout the U.S. Those working in the Mountain states reported the highest median salaries ($48,600) while those working in the West North Central reported the lowest (Tables 139 and 140).

Engineers employed in supervisory positions command higher salaries than non-supervisors. However, the salary differential between supervisory and non-supervisory status is not constant across employment groups. The largest differential occurs in the electronic equipment industry, where the spread ratio is 50.3% and the smallest differences are found in non-manufacturing (17.3%). The differential for all industry is 39.7%. Regardless of supervisory status, engineers employed in research and development laboratories earned the highest median salaries in 1987, while those engineers employed in state governments earned the least (Table 141). Median annual salaries for engineers employed in industry in 1986 by degree level and years since the baccalaurate are shown in Chart 3.

The twenty-first national compensation survey by the **National Society of Professional Engineers - PROFESSIONAL ENGINEER INCOME AND SALARY SURVEY 1987** found that the median income of NSPE members reached $49,400 in January 1987, up 4.7% over 1986. The increase in the Consumer Price Index during the same period was only 1.4%.

By level of education, those engineers holding doctorates had a median income of $61,325 (up 4.7% over 1986), while those with a M.S. in engineering reported a median income of $51,550 (up 5.2%), and those with the B.S. in engineering $46,800 (up 4.0%) (Table 142). Regardless of degree level, median income increases with engineering experience as shown in Table 143.

Petroleum engineers reported the highest median, $59,000, regardless of experience level, but more experience does not produce increased salaries in the same relative order for other fields (Table 144). Median income of engineers by branch of engineering and length of experience is shown in Tables 144 and 145.

Geographically, engineers employed in the Northeastern states reported the highest median incomes - $53,000, up 5.6% from 1986. The lowest median incomes were reported by engineers working in the Great Plains states - $45,250 (Table 146). By metropolitan area, the highest median incomes were found in New York City ($61,700), Nassau/Suffolk Counties, New York ($59,000) and San Francisco/Oakland, CA ($57,500). The lowest median incomes were found in Cincinnati ($43,130), Cleveland ($44,900) and Milwaukee ($46,866) (Table 147).

Engineers employed by construction and real estate development firms and by colleges and universities reported the highest median income - $55,000, followed by those employed by manufacturers of chemical, pharmaceutical and allied products ($53,500). The lowest median incomes were received by engineers employed by state and local governments and by the federal government ($42,000, $43,000, and $43,000 respectively) (Table 148).

Regardless of years of experience, engineers in executive/administrative positions were the highest-paid respondents reporting a median income of $60,000, followed by those in teaching/training and sales/marketing with median incomes of $49,400 and $48,941 respectively. Those engineers working in the design field fared least well reporting a median income of $42,000 (Tables 150 and 151).

Salaries for engineers continued to increase in 1987, according to **Source Engineering Personnel Services.** The **1987 ENGINEERING SALARY SURVEY ...**, based on an analysis of the incomes of thousands of engineering professionals that Source Engineering Personnel Services assisted during 1987, finds that those engineers working in design and development commanded higher salaries than did those working in manufacturing, testing or quality control (Table 151). Those engineers employed in sales/marketing received compensation ranging from $31,000 for field engineers to $75,000 for the director of sales/marketing or vice president (Table 152).

Engineering compensation increased an average 3.5% in base salary and 3.0% in total cash compensation from 1985 to 1986, according to the 73 organizations who responded to the sixth annual study of cash compensation for selected positions in the engineering function and reported in **1986 HAY ENGINEERING COMPENSATION COMPARISON** conducted by **The Hay Group.**

Journeyman engineers working in applied research were the highest paid ($40,700). Entry level engineers and engineering managers reported the highest compensation working in product development ($32,400 and $75,800 respectively), while engineering supervisors reported the highest annual compensation working in facility design/construction - $52,300 (Table 153).

Entry-level aerospace engineers receive the highest annual compensation ($33,000), while journeyman engineers who are nuclear engineers recieve the highest ($41,700). Engineering supervisors who are aerospace engineers and engineering managers who are metallurgical engineers were paid the highest annual compensation among the disciplines - $50,800 and $81,100 respectively (Table 154).

Both entry level and journeyman engineers working in the New York/New Jersey area were paid the highest ($33,100 and $41,700 respectively) as were engineering supervisors working in this region ($52,700). However, engineering managers working in the Midwest earned the most - $78,200 (Table 155).

The chemical/petroleum industry paid engineers the highest base salary regardless of level of responsibility. Engineers working in the utilities industry reported the next highest salaries (Table 156).

In another survey of compensation in the high technology industry, by **The Hay Group**, median salaries ranged from a high of $290,000 paid to the chief executive officer to a low of $71,800 to the head of quality assurance/control (Table 157).

The results of the **American Chemical Society** Salary and Employment Status Survey are presented in four separate reports in 1987. The 1987 survey found median salaries of chemical engineers increasd at all degree levels over the previous year. The data, as presented in **1987 SALARIES OF NON-ACADEMIC CHEMICAL ENGINEERS**, show the overall median salary for Ph.D. industrial chemical engineers up 1.5% to $61,000, while master's degree chemical engineers reported an increase of 7% to $51,000 and bachelor's degree chemical engineers median salary increased 9% to $47,100. Because the Consumer Price Index rose only 3% from March 1986 to March 1987, those salary increases represent increases in constant dollars for both bachelor's and master's degree chemical engineers, but decreases in constant dollars for Ph.D. chemical engineers (Table 158).

As in the past, salaries for women chemical engineers were lower than for men. The median salary for women Ph.D.s in industry was 72% of that for men. The difference in men's and women's median salaries is largely due to differences in experience. Only a small proportion of chemical engineers are women (6% of those surveyed) and most of the women are new to the profession (Tables 158 and 159).

Salaries in industry vary by type of industry. Regardless of degree level, median salaries for chemical engineers were highest in the petroleum/natural gas industry followed by the basic chemicals industry and lowest in the electronics industry (Table 160). As in other fields, those chemical engineers working in management of R & D or in general management reported the highest salaries (Table 161).

Salaries also differed by geographic region. The median salary of B.S. chemical engineers ranged from a high of $57,000 in the West South Central region to a low of $36,600 in the West North Central region (Table 162).

Average compensation for industrial engineers on January 1, 1987 was $45,400 according to the tenth survey conducted by **Abbott, Langer and Associates** for the **American Institute of Industrial Engineers.** However, median income varied considerably from one employer to another. Overall, median income in non-manufacturing organizations was considerably higher ($45,585) than in manufacturing firms ($39,500). The lowest median income was found in textile mill products manufcturing firms ($35,000), while the median income was highest for those industrial engineers employed by non-engineering consulting firms ($55,000) (Table 163).

Median income of industrial engineers was highest in the Pacific States with the San Francisco/Oakland metropolitan area showing the highest median salary of the areas surveyd - $47,900. As a group, industrial engineers working in the North Central states reported the lowest median salary ($38,800), but the Philadelophia metropolitan area reported the lowest median income of the areas surveyed - $38,250 (Table 164).

The median income of IIE engineers varied according to degree level. Those with less than a bachelor's degree had a median income of $36,290, while those with bachelor's degrees in engineering had median annual incomes of $36,500. Ph.D.s had the highest median income - $51,788 (Table 165).

The total income of industrial engineers rose fairly regularly by length of experience, ranging from a median income of $28,445 for those with under one year of experience to $53,000 for those with 30 or more years of experience (Table 166).

By primary activity or specialty, the highest median income went to those engaged in organization administration at $48,300. At the low end of the spectrum were those engaged in work measurement, standards and performance measures at $35,000 (Table 167). As expected, the median income was highest for IEE members who were corporate officers or in general management ($65,000). Educators had a median income of $46,700, while engineers, analysts or other professionals had the lowest median income of $34,736 (Table 168).

In another survey by **Abbott, Langer and Associates** on **COMPENSATION IN MANUFACTURING (ENGINEERS AND MANAGERS)**, prepared for the **Society of Manufacturing Engineers**, engineers reported a median annual salary of $34,320 and median annual compensation of $35,000 as of January 1, 1987. Managerial personnel in manufacturing reported a median salary of $47,190 and median compensation of $49,584 for the same time period. Naturally, length of experience played a significant part in determining income. Total median compensation for engineers ranged from $28,679 for those with less than three years of experience to $37,800 for those with 20 to 24 years experience (Table 169).

Engineers working in manfuacturing who majored in chemical engineering reported the highest median salary $39,820, while those who specialized in cost value engineering reported the lowest, $28,449 (Table 170).

By type of product manufactured, engineers employed by firms manufacturing food, beverage, or tobacco products reported the highest median total compensation ($37,750), while those employed by manufacturers of furniture and wood products earned the least ($24,190) (Table 171).

Level of education had a greater effect upon the income of managers (Table 174) than on the income of engineers (Table 172). The lowest median salary of managers by level of education was $40,734 for those who held an associate (two-year) degree, increasing to $58,920 for those who have a Ph.D. - a difference of 30.8%. For engineers, salaries ranged from $28,632 for those who held a master's degree in a non-engineerring field to $36,665 for those who held a master's degree in engineering - a difference of 21.9%.

Engineers reported the highest median salary in California ($41,777), while those engineers working in North Carolina reported the lowest median compensation ($25,000) (Table 173).

The median annual salary of engineers who are members of the **Institute of Electrical and Electronics Engineers** was $50,000 as of January 15, 1987, according to the 1987 **IEEE U.S. MEMBERSHIP SALARY AND FRINGE BENEFIT SURVEY** the eighth salary survey conducted, analyzed, and conducted by IEEE. By level of education, median income was highest for those with doctoral degrees ($62,000). The lowest median income ($35,000) went to those with a bachelors in educational technology or Bachelors of Science in Educational Technology, even though this category was not the lowest level of formal education (Table 175).

Income showed a high correlation with increasing age and increased length of engineering experience. IEEE engineers employed in their areas of primary technical competence who are under 30 years of age reported a median income of $34,000 compared to $60,900 for those who are over 60 years old (Table 176). This same correlation is evident for those with increasing years of experience. The median income for those working in their areas of primary technical competence increased from $30,000 for those under two years of experience to $62,400 for those with 30 years of experience or more (Table 177). Most of the female IEEE members are younger and thus have fewer years of experience and lower salaries than do their male colleagues (Table 178).

Median income increased regularly with increased professional responsibility, from $29,400 for a beginning engineer (Engineer 1) to $78,000 for Engineer 9 (Table 179).

Median income ranged widely by industry or service of employer, from $58,700 in electrical and other services and $58,600 in television broadcasting to $42,000 in local government (Table 180).

Median income by primary technical competence was highest ($63,000) for those in engineering management, followed by those in non-technical areas ($61,500) and lowest in computer maintenance ($40,000) (Table 181).

New York City & Vicinity reported the highest median income for IEEE engineers ($63,400), followed by Boston & vicinity ($62,100). The lowest median income ($46,100) was found in the St. Louis area (Table 182).

Median income by principal job function was highest for those in general and corporate management ($70,000) and basic research ($56,200). Lowest median incomes went to those in engineering support ($32,000) (Table 183). Table 184 presents a comparison of IEEE members who are teachers or are self-employed by years of experience.

In another survey by the **Institute of Electrical and Electronics Engineers** of their members in the Washington, DC area, reported in **IEEE NATIONAL CAPITAL AREA COUNCIL 1986 SALARY AND FRINGE BENEFITS SURVEY**, the median salary of the 5,133 repondents was $45,798. Table 185 reports on the average salary of these IEEE members by type of employer and level of responsibility.

SOURCE: Engineering Manpower Commission of American Association of Engineering Societies, Engineer's Salaries: Special Industry Report, 1987 and Professional Income of Engineers 1987

TABLE 135

MEDIAN AND MEAN SALARIES OF ENGINEERS BY TYPE OF EMPLOYMENT GROUP, 1987

EMPLOYMENT GROUP	MEDIAN	MEAN
INDUSTRIAL SECTOR		
Aerospace	$41,950	$44,950
Automotive	45,350	46,050
Chemicals/Drugs/Plastics	49,000	51,000
Computers	46,150	48,400
Construction	38,850	41,900
Consulting	44,500	46,350
Electric Utilities	45,000	46,950
Electrical Machinery	39,750	42,450
Electronic Equipment	41,000	43,750
Electrical Machinery/ Electronics/Computers	41,100	43,900
Engineering Services	44,550	46,500
Fabricated Metal Products	42,000	44,500
Gas Utilities	47,450	51,000
Precision Instruments	41,300	43,400
Non-Electrical Machinery	37,700	40,250
Petroleum	52,100	57,000
Research & Development Laboratories	51,800	53,250
Other Durable Goods Manufacturing	44,150	45,700
Other Non-Durable Goods Manuacturing	42,950	45,800
Other Non-Manufacturing	42,350	44,950
NON-INDUSTRIAL SECTOR		
Federal Government	36,100	37,250
State Government	35,000	35,400
Local Government	39,500	40,550

SOURCE: Engineering Manpower Commission of American Association of Engineering Societies, Engineer's Salaries: Special Industry Report 1987, Professional Income of Engineers 1987, and Salaries of Engineers in Education, 1986

TABLE 136

NUMBER AND MEDIAN ANNUAL SALARIES OF ENGINEERS BY TYPE OF EMPLOYMENT GROUP AND SELECTED YEARS SINCE BACCALAUREATE, 1987

EMPLOYMENT GROUP	YEARS SINCE BACCALAUREATE									
	0	1	5	7	9-11	15-17	18-20	21-23	27-29	33+
All Industries	(2,150) $29,550	(3,564) $30,950	(4,678) $36,800	(4,034) $39,700	(9,339) $43,750	(9,013) $49,900	(7,608) $51,800	(7,060) $53,050	(6,188) $54,150	(9,074) $54,400
All Manufacturing Industries	(1,179) 29,600	(1,985) 30,900	(2,508) 36,400	(2,053) 39,100	(4,441) 42,850	(4,371) 48,500	(3,689) 50,250	(3,547) 51,400	(3,293) 52,400	(4,594) 52,650
All Non-Manufacturing Industries	(924) 29,650	(1,485) 31,150	(2,103) 37,550	(1,988) 40,800	(5,100) 45,400	(4,787) 52,500	(4,042) 54,750	(3,555) 56,200	(2,821) 57,550	(4,512) 57,850
Federal Government	(130) 24,900	(161) 27,450	(100) 35,350	(47) 37,800	(159) 40,100	(128) 41,900	(94) 42,150	(105) 42,300	(83) 42,350	(56) 42,350
State Government	(596) 25,250	(608) 27,650	(243) 35,950	(216) 38,100	(236) 39,550	(360) 40,050	(256) 40,100	(303) 40,100	(349) 40,100	(532) 40,100
Local Government	(9)	(11) 28,700	(17) 32,200	(13) 34,700	(37) 36,800	(51) 42,150	(42) 44,400	(23) 46,250	(33) 48,000	(55) 43,800
All Education Administrative*	(1)		(3)	(1)	(14) 35,350	(33) 50,300	(87) 55,050	(109) 58,050	(134) 60,800	(186) 61,600
All Education Research*	(6)	(8)	(31) 27,850	(32) 29,640	(94) 32,550	(78) 38,800	(80) 41,950	(59) 44,950	(70) 49,650	(86) 51,250
Consulting	(113) 26,950	(189) 28,250	(217) 34,150	(200) 37,200	(611) 41,700	(671) 48,950	(589) 51,300	(462) 52,900	(305) 54,300	(542) 54,650
Research and Development Labs	(397) 31,400	(655) 33,450	(848) 41,450	(834) 45,100	(2,259) 49,800	(1,990) 56,300	(1,852) 58,150	(1,867) 59,350	(1,700) 60,350	(2,840) 60,600
Engineering Services	(105) 28,850	(169) 30,150	(221) 35,850	(220) 38,750	(502) 42,950	(538) 49,550	(469) 51,770	(352) 53,100	(253) 54,350	(395) 54,650

NOTE: Blanks indicate no median salaries computed for fewer than 10 respondents. **Education figures are for 1986.

SOURCE: Engineering Manpower Commission of American Association of Engineering Societies, Engineer's Salaries: Special Industry Report 1987

TABLE 137

NUMBER AND MEDIAN ANNUAL SALARIES OF ENGINEERS BY TYPE OF INDUSTRY AND SELECTED YEARS SINCE BACCALAUREATE, 1987

TYPE OF INDUSTRY	YEARS SINCE BACCALAUREATE									
	0	1	5	7	9-11	15-17	18-20	21-23	27-29	33+
Aerospace	(506) $28,100	(619) $29,350	(536) $34,500	(375) $37,200	(729) $41,100	(529) $48,000	(628) $50,600	(704) $52,500	(756) $54,350	(1,351) $53,800
Chemicals/Drugs/ Plastics	(174) 29,700	(248) 31,300	(599) 38,000	(705) 41,350	(1,056) 46,100	(1,292) 53,300	(973) 55,600	(1,101) 57,050	(663) 58,400	(926) 58,750
Construction	(20) 24,750	(26) 26,200	(59) 32,000	(53) 34,750	(109) 38,450	(83) 43,700	(72) 45,200	(51) 46,150	(38) 47,000	(33) 47,150
Electric Machinery/ Electronics/Computers	(756) 29,550	(950) 30,850	(799) 36,000	(711) 38,[illegible]00	(1,191) 41,650	(1,338) 46,650	(1,072) 48,300	(1,113) 49,500	(1,080) 50,850	(1,181) 51,450
Computers	(19) 29,200	(12) 30,800	(23) 37,700	(20) 41,200	(53) 46,150	(30) 53,750	(39) 56,200	(37) 57,800	(29) 59,250	(19) 59,600
Electronic Equipment	(700) 29,750	(872) 31,000	(681) 35,850	(591) 38,150	(950) 41,350	(1,139) 46,500	(912) 48,400	(947) 49,950	(927) 51,900	(1,021) 53,150
Electrical Machinery	(50) 28,900	(76) 30,250	(93) 35,500	(96) 38,000	(190) 41,250	(138) 45,900	(98) 47,300	(109) 48,150	(102) 48,950	(131) 49,150
Precision Instruments	(1)	(16) 31,500	(17) 36,900	(7) 39,550	(23) 43,100	(7) 48,100	(10) 49,500	(11) 50,400	(101) 51,100	(24) 51,250
Fabricated Metal Products	(51) 28,550	(63) 29,600	(115) 34,100	(110) 36,550	(261) 40,400	(175) 48,200	(176) 51,700	(165) 54,450	(107) 56,750	(119) 48,800
Automotive	(102) 26,150	(105) 29,050	(92) 39,450	(63) 43,200	(176) 46,650	(255) 48,750	(196) 48,800	(267) 48,800	(163) 48,800	(191) 48,800
Non-Electric Machinery	(4)	(2)	(8) 31,750	(6) 33,150	(22) 35,200	(36) 39,250	(24) 41,100	(14) 42,850	(11) 45,450	(23) 46,350
Petroleum	(116) 32,050	(173) 33,800	(575) 41,750	(445) 46,150	(1,006) 52,850	(603) 64,250	(540) 68,200	(443) 70,850	(309) 73,350	(403) 73,950
Electric Utilities	(323) 29,700	(444) 31,350	(745) 37,950	(520) 41,100	(1,415) 45,450	(1,376) 51,850	(755) 53,800	(666) 55,050	(420) 56,200	(747) 56,450
Gas Utilities	(17) 27,900	(17) 29,800	(30) 37,850	(26) 41,900	(62) 47,650	(64) 56,600	(32) 59,500	(21) 61,350	(26) 63,050	(38) 63,450
Other Durable Goods Manufacturing	(21) 28,350	(30) 30,300	(76) 34,050	(87) 36,850	(260) 41,200	(206) 48,700	(212) 51,300	(189) 53,050	(126) 54,700	(263) 55,050
Other Non-Durable Goods Manufacturing	(20) 28,550	(37) 29,550	(27) 34,250	(35) 36,850	(61) 40,650	(65) 46,850	(46) 48,850	(46) 50,200	(72) 51,450	(83) 51,750

SOURCE: Engineering Manpower Commission of American Association of Engineering Societies, Engineering Salaries: Special Industry Report 1987

TABLE 138

NUMBER AND MEDIAN ANNUAL SALARIES OF ENGINEERS EMPLOYED IN INDUSTRY BY HIGHEST DEGREE AND SELECTED YEARS SINCE BACCALAUREATE, 1987

HIGHEST DEGREE	YEARS SINCE BACCALAUREATE									
	1	5	7	9-11	15-17	18-20	21-23	27-29	33+	Overall
B. S.	(3,328) $30,750	(3,681) $36,050	(2,952) $38,650	(5,920) $42,250	(5,558) $47,700	(4,350) $49,350	(3,967) $50,450	(3,983) $51,400	(6,187) $51,650	(72,809) $41,650
M. S.		(937) 39,650	(936) 42,050	(2,731) 45,800	(2,573) 52,350	(2,245) 54,600	(2,123) 56,100	(1,669) 57,450	(2,327) 57,800	(25,596) 49,800
Ph. D.		(60) 47,700	(146) 48,100	(688) 49,650	(882) 56,650	(1,013) 59,750	(970) 62,000	(536) 64,200	(560) 64,500	(7,318) 57,250
ALL LEVELS	(3,564) 30,000	(4,678) 35,800	(4,034) 38,600	(9,339) 42,600	(9,013) 48,850	(7,608) 50,850	(7,060) 52,200	(6,188) 53,250	(9,074) 53,050	(105,723) 43,650

Blanks indicate insufficient data.

TABLE 139

MEDIAN AND MEAN SALARIES OF ENGINEERS BY GEOGRAPHICAL REGION, 1987

GEOGRAPHICAL REGION	MEDIAN	MEAN
Pacific	$46,450	$49,400
Middle Atlantic	46,900	48,600
Mountain	48,600	50,000
New England	41,850	44,400
East North Central	45,300	47,350
West North Central	40,500	42,450
East South Central	44,800	46,900
West South Central	40,150	43,650
South Atlantic	46,450	48,100

*Includes only engineers employed in industry.

SOURCE: Engineering Manpower Commission of American Association of Engineering Societies, Engineer's Salaries: Special Industry Report, 1987

TABLE 140

NUMBER AND MEDIAN ANNUAL SALARIES OF ENGINEERS BY GEOGRAPHIC AREA AND SELECTED YEARS SINCE BACCALAUREATE, 1987*

GEOGRAPHIC AREA	YEARS SINCE BACCALAUREATE									
	0	1	5	7	9-11	15-17	18-20	21-23	27-29	33+
	(58)	(74)	(90)	(55)	(239)	(172)	(138)	(81)	(66)	(265)
New England	$29,350	$30,350	$34,500	$36,750	$40,200	$47,050	$50,000	$52,450	$54,600	$48,550
	(327)	(802)	(1,174)	(1,029)	(2,456)	(2,081)	(1,785)	(1,559)	(1,319)	(1,713)
Middle Atlantic	29,500	31,300	38,450	41,750	46,200	52,450	54,300	55,500	56,550	56,800
	(565)	(996)	(1,362)	(1,248)	(3,072)	(2,674)	(2,178)	(2,008)	(1,435)	(2,237)
East North Central	30,100	31,800	38,400	41,350	45,150	50,300	51,800	52,700	53,550	53,700
	(40)	(102)	(82)	(99)	(236)	(121)	(83)	(130)	(92)	(89)
West North Central	30,250	31,200	35,150	37,200	40,350	46,450	49,100	51,200	53,150	48,000
	(188)	(408)	(553)	(392)	(968)	(811)	(761)	(709)	(598)	(1,372)
South Atlantic	29,100	30,750	37,350	40,550	45,000	51,600	53,650	54,950	56,160	56,450
	(113)	(89)	(219)	(246)	(560)	(565)	(561)	(438)	(427)	(621)
East South Central	28,900	29,800	34,250	36,850	40,850	47,550	49,800	51,350	52,750	53,050
	(546)	(480)	(490)	(428)	(753)	(618)	(541)	(508)	(393)	(566)
West South Central	29,350	30,400	35,100	37,650	41,400	47,350	49,300	50,600	51,750	52,050
	(53)	(83)	(166)	(162)	(493)	(488)	(375)	(321)	(348)	(363)
Mountain	30,500	31,950	38,100	41,250	45,650	52,450	54,650	56,050	57,350	57,650
	(254)	(342)	(620)	(514)	(1,224)	(1,409)	(1,174)	(1,217)	(1,110)	(1,534)
Pacific Coast	29,150	30,200	35,400	38,400	43,000	50,850	53,550	55,350	57,050	57,450

*Includes only engineers employed in industry.

SOURCE: Engineering Manpower Commission of the American Association of Engineering Societies, Engineers Salaries: Special Industry Report 1987, Professional Income of Engineers, 1987, and "Engineers' Salaries 1986," EMBulletin, No. 82, November 1986

TABLE 141

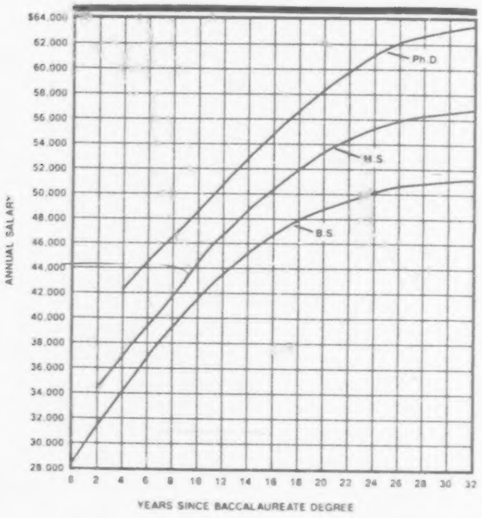
MEDIAN SALARIES OF ENGINEERS BY TYPE OF EMPLOYMENT GROUP AND SUPERVISORY STATUS, 1987

EMPLOYMENT GROUP	Supervisor	Non-Supervisor	Percent Differential
Research and Development Labs.	$68,,150	$48,700	39.9
Petroleum	64,700	44,850	44.3
Aerospace	62,100	37,750	64.5
Chemicals/Drugs/Plastics	60,400	45,000	34.2
Automotive	60,350	41,800	44.4
Consulting & Engineering Services	58,150	40,300	44.3
Electronic Equipment	57,700	38,400	50.3
Electrical Equipment/Electronics/ Computers	56,550	38,300	47.7
Computers	*	41,100	*
Electric & Gas Utilities	55,150	41,350	33.4
Other Durable Goods Mfg.	54,350	41,400	31.3
Other Non-Durable Goods Manufacturing	52,600	38,700	35.9
Fabricated Metal Products	51,550	39,450	30.7
Electrical Machinery	50,050	36,100	38.6
Other Non-Manufacturing	46,900	39,990	17.3
Construction	46,550	33,200	40.2
Local Government	46,000	33,600	36.9
Federal Government	45,650	34,000	34.3
State Government	42,100	29,450	43.0
ALL INDUSTRY	**57,500**	**41,150**	**39.7**

Insufficient responses.

CHART 3

MEDIAN SALARIES OF ENGINEERS IN INDUSTRY BY DEGREE LEVEL, 1986



SOURCE: National Society of Professional Engineers, Professional Engineer Income and Salary Survey, 1987, June 1987.

TABLE 142

MEDIAN INCOME OF PROFESSIONAL ENGINEERS BY LEVEL OF EDUCATION, 1983-87

LEVEL OF EDUCATION	MEDIAN INCOME			% INCREASE	
	1983	1986	1987	1983-86	1986-87
Less than BA/BS Degree	$40,000	$46,592	$50,000	16.5	7.3
B. A. Degree	46,000	48,015	52,000	4.4	8.3
B. S. Degree (Non-Eng.)	40,000	48,000	48,000	20.0	0.0
B. S. Degree (Engineering)	40,000	45,000	46,800	12.5	4.0
MA/MS Degree (not MBA or Engineering)	42,550	50,400	52,000	18.4	3.2
MBA Degree	43,260	50,500	52,313	16.7	3.6
M. S. Degree in Engineering	42,500	49,000	51,550	15.3	5.2
Doctorate	49,960	58,565	61,325	17.2	4.7

TABLE 143

MEDIAN INCOME OF PROFESSIONAL ENGINEERS BY LEVEL OF EDUCATION AND LENGTH OF EXPERIENCE, JANUARY 1, 1987

LENGTH OF EXPERIENCE	Less than Bachelor's Degree	B. S. in Engineering	M. S. in Engineering	Doctorate	M.B.A.
Under 1 Yr.	$	$26,000	$28,500	$	$26,250
1 Yr.		28,000	30,250		
2 Yrs.		29,250	33,600	44,400	35,940
3 Yrs.		30,300	32,995		
4 Yrs.		33,400	35,640	39,900	36,244
5-9 Yrs.	43,000	38,400	40,009	45,448	41,900
10-14 Yrs.	37,825	45,168	47,910	51,450	48,507
15-19 Yrs.	47,400	50,000	53,000	56,500	57,000
20-24 Yrs.	47,671	53,500	58,000	62,796	59,000
25-29 Yrs.	50,732	55,157	58,932	67,815	56,115
30 Yrs. or More	52,000	59,408	60,710	65,050	60,000

SOURCE: National Society of Professional Engineers, Professional Engineer Income and Salary Survey, 1987, June 1987.

TABLE 144

MEDIAN INCOME OF PROFESSIONAL ENGINEERS BY BRANCH OF ENGINERING AND LENGTH OF EXPERIENCE, JANUARY 1, 1987

BRANCH OF ENGINEERING	Under 1 Yr.	1 Yr.	2 Yrs.	3 Yrs.	4 Yrs.	5-9 Yrs.	10-14 Yrs.	15-19 Yrs.	20-24 Yrs.	25-29 Yrs.	30 Yrs. or More
Aeronautical & Aerospace	$	$29,750	$30,095	$33,678	$32,114	$38,500	$45,770	$54,650	$54,515	$66,100	$59,000
Agricultural		26,000				36,044	43,408	51,702	55,500	49,700	55,000
Architectural						36,550	51,604	48,250	61,400	59,000	65,000
Chemical	31,239	26,503	30,225	31,560	33,727	40,400	49,400	55,848	65,500	65,500	61,309
Civil (General)	24,014	24,960	25,750	28,800	31,700	37,[illegible]	44,000	48,846	52,326	53,000	57,000
Civil (Primarily Structural)	24,180	28,670	28,152	27,424	28,348	36,908	44,000	51,920	55,000	61,680	58,100
Civil (Primarily Surveying)						36,500	39,250	39,000	62,250	50,500	54,900
Cost/Value						36,426	45,547	45,899	52,000		56,810
Electrical & Electronic	29,100	30,000	31,025	33,000	36,000	41,000	48,000	52,594	56,000	57,500	60,000
Industrial	25,000	30,100	30,000	32,500		39,900	47,000	49,100	61,400	60,000	66,190
Manufacturing			29,886	32,731	34,000	41,000	44,355	52,300	55,600	58,150	55,000
Mechanical	25,500	28,912	39,640	31,168	36,000	40,000	47,400	53,364	55,000	58,000	61,259
Metallurgical & Materials						33,960	46,440	59,950	54,600	56,000	57,100
Mining					31,350	40,085	55,150	80,000	60,000	90,800	58,000
Nuclear	27,000					43,942	50,386	60,040	61,254	60,707	69,500
Petroleum	33,000	33,057	29,797	32,656		50,000	62,630	61,515	79,000	74,920	80,612
Safety							34,195	61,443	52,000	41,200	54,840
Sanitary, Envir. & Pollution Control		26,008	28,135	33,000	33,037	37,000	44,973	53,300	59,141	54,500	61,737

SOURCE: National Society of Professional Engineers, Professional Engineer Income and Salary Survey, 1987, June 1987.

TABLE 145

MEDIAN INCOME OF PROFESSIONAL ENGINEERS BY BRANCH OF ENGINEERING, 1983-87

BRANCH OF ENGINEERING	MEDIAN INCOME			% INCREASE	
	1983	1986	1987	1983-86	1986-87
Aeronautical and Aerospace	$42,125	$47,000	$50,000	11.6	6.4
Agricultural	38,470	45,672	47,500	18.7	4.0
Architectural	43,350	46,000	50,500	6.1	9.8
Chemical	46,800	49,306	51,490	5.4	4.4
Civil (General)	38,845	45,000	47,000	15.8	4.4
Civil (Primarily Structural)	41,000	48,000	48,980	17.1	2.0
Civil (Primarily Surveying)	36,000	42,000	49,250	16.7	17.3
Cost/Value	39,850	46,435	49,970	16.5	7.6
Electrical & Electronic	42,290	48,691	50,318	15.1	3.3
Industrial	41,500	47,928	47,500	15.5	-0.9
Manufacturing	42,000	42,250	44,142	0.6	4.5
Mechanical	43,000	48,000	50,000	11.6	4.2
Metallurgical & Materials	42,653	49,350	50,496	15.7	2.3
Mining			49,100		
Nuclear	43,000	50,000	53,000	16.3	6.0
Petroleum & Mining	52,500*	52,850*	59,000	0.7	
Safety	40,516	49,965	47,192	1.1	15.2
Sanitary, Environmental & Pollution Control	39,000	45,348	47,800	16.3	5.4

* Includes Mining.

TABLE 146

MEDIAN INCOME OF PROFESSIONAL ENGINEERS BY REGION, 1983-1987

REGION	MEDIAN INCOME			% INCREASE	
	1983	1986	1987	1983-86	1986-87
Northeastern States	$43,600	$50,210	$53,000	15.2	5.6
Southern States*	40,476	45,700	48,800	12.9	6.8
Great Lakes States	39,600	45,229	47,500	14.2	5.0
Great Plains States	38,000	43,743	45,250	15.1	3.4
Southwestern States	43,057	48,000	49,770	11.5	3.7
Pacific & Western States**	42,900	49,500	50,400	15.4	1.8

* Includes Puerto Rico and Panama. ** Includes Alaska, Hawaii, and Guam.

SOURCE: National Society of Professional Engineers, Professional Engineer Income and Salary Survey, 1987, June 1987.

TABLE 147

NUMBER, MEDIAN AND MEAN ANNUAL SALARIES OF PROFESSIONAL ENGINEERS BY METROPOLITAN AREA, JANUARY 1, 1987

METROPOLITAN AREA	Number Reported	Median	Mean
Atlanta (GA) & Vicinity	221	$49,750	$59,804
Baltimore (MD) & Vicinity	100	52,250	60,117
Boston (MA) & Vicinity	235	56,714	66,528
Chicago (IL) & Vicinty	478	51,500	59,544
Cincinnati (OH/KY/IN) & Vicinity	184	43,130	50,311
Cleveland (OH) & Vicinity	195	44,900	50,420
Dallas/Ft. Worth (TX) & Vicinity	525	50,400	60,221
Denver/Colorado Springs (CO) & Vicinity	184	50,000	54,654
Detroit (MI) & Vicinity	293	52,500	60,075
Houston (TX) & Vicinity	456	53,000	61,188
Indianapolis (IN) & Vicinity	119	49,660	56,091
Kansas City (MO/KS) & Vicinity	272	48,000	54,767
Los Angeles/Long Beach/San Diego (CA) & Vicinity	319	55,600	62,384
Miami (FL) & Vicinity	182	55,000	66,241
Milwaukee (WI) & Vicinity	145	46,866	53,186
Minneapolis/St. Paul (MN/WI) & Vicinity	193	49,100	54,070
Naussau/Suffolk Counties (NY) & Vicinity	105	59,000	68,938
Newark/Jersey City (NJ) & Vicinity	291	56,450	65,453
New Orleans (LA) & Vicinity	136	49,807	59,647
New York City (NY) - 5 Boroughs	266	61,700	75,473
Philadelphia (PA/NJ) & Vicinity	349	51,680	62,508
Phoenix (AZ) & Vicinity	106	52,000	57,711
Pittsburgh (PA) & Vicinity	228	48,450	53,245
St. Louis (MO/IL) & Vicinity	256	48,550	54,840
San Francisco/Oakland (CA) & Vicinity	171	57,500	68,275
San Jose (CA) & Vicinity	74	56,250	61,921
Seattle/Everett (WA) & Vicinity	99	48,000	57,047
Tampa/St. Petersburg (FL) & Vicinity	197	47,000	53,778
Washington (DC/MD/VA) & Vicinity	354	54,341	61,348

SOURCE: National Society of Professional Engineers, Professional Engineer Income and Salary Survey, 1987, June 1987.

TABLE 148

NUMBER REPORTED, MEAN AND MEDIAN INCOME OF PROFESSIONAL ENGINEERS BY INDUSTRY OR SERVICE OF EMPLOYER, JANUARY 1, 1987

INDUSTRY OR SERVICE OF EMPLOYER	Total Employees Reported	Median	Mean
All Manufacturing/Extractive Employers	**2,942**	**$49,500**	**$56,061**
Aerospace & Aircraft Products	325	48,500	51,093
Chemical, Pharmaceutical & Allied Products	325	53,500	59,455
Electrical & Electronic Equipment	475	49,500	56,228
Fabricated Metal Products	304	45,000	53,660
Food, Beverage & Tobacco Products	140	51,824	60,836
Machinery (except electrical)	180	48,362	56,973
Petroleum & Coal Products	387	52,920	61,547
Primary Metal Industries	101	48,000	51,431
Rubber & Plastic Products	77	46,920	56,506
Stone, Clay & Glass and Concrete Products	123	48,000	53,659
Transportation Equipment	174	47,049	51,540
All Non-Manufacturing/Extractive Employees	**10,548**	**49,380**	**56,567**
College & Universities	577	55,000	57,388
Communication Services	222	51,575	59,647
Construction & Real Estate Development	755	55,000	69,073
Engineering Services/Private Practice	4,832	51,500	60,624
Government-Federal (including Armed Forces)	688	43,000	44,897
Government-State	579	42,000	42,726
Government-Local (cities, counties, etc.)	899	43,000	44,844
Research Organizations & Laboratories	144	52,070	53,998
Transportation Services	70	52,050	52,646
Utilities-Electric	1,038	49,200	63,402
Utilities-Gas	135	48,000	54,062
Utilities-Pipelines	89	48,840	56,525
Utilities-Other or Mixed	243	50,000	53,991

SOURCE: National Society of Professional Engineers, Professional Engineer Income and Salary Survey, 1987, June 1987.

TABLE 149

MEDIAN INCOME OF PROFESSIONAL ENGINEERS BY JOB FUNCTION AND LENGTH OF EXPERIENCE, JANUARY 1, 1987

LENGTH OF EXPERIENCE	Construction/ Supervision	Project Study & Analysis	Design	Execut./ Administrative	Production Quality Control, Maintenance	Research and Development	Sales/ Marketing	Teaching/ Training
Under 1 Yr.	$25,250	$27,265	$25,100	$29,000	$28,221	$31,278	$	$
1 Yr.	24,996	27,900	27,640		30,100	28,923	29,450	
2 Yrs.	28,000	29,250	28,400	31,448	29,766	32,500		
3 Yrs.	30,450	32,236	29,000	31,600	33,030	34,770	30,300	
4 Yrs.	34,590	34,800	32,000	40,539	34,290	34,738	37,000	
5-9 Yrs.	38,500	39,099	37,056	42,500	40,650	39,350	40,548	35,000
10-14 Yrs.	44,137	46,000	43,000	51,000	45,860	47,000	49,250	40,200
15-19 Yrs.	47,925	50,475	47,996	55,040	50,900	53,050	53,667	47,500
20-24 Yrs.	49,200	53,820	49,500	62,000	49,000	54,500	54,000	45,000
25-29 Yrs.	49,500	53,770	50,000	64,200	51,200	51,210	53,013	52,500
30 Yrs. or More	50,000	54,000	51,000	66,946	51,603	55,000	56,660	55,000

SOURCE: National Society of Professional Engineers, Professional Engineer Income and Salary Survey, 1987, June 1987.

TABLE 150

MEDIAN INCOME OF PROFESSIONAL ENGINEERS BY JOB FUNCTION 1983-1987

JOB FUNCTION	MEDIAN INCOME			% INCREASE	
	1983	1986	1987	1983-86	1986-87
Construction Supervision	$36,400	$42,000	$42,898	15.4	2.1
Design	35,700	40,800	42,000	14.3	2.9
Executive/Administrative	50,000	56,800	60,000	13.6	5.6
Production, Quality Control, Maintenance, etc.	36,700	42,000	43,533	14.4	3.7
Project Study & Analysis	37,800	42,640	44,947	12.8	5.4
Research and Development	41,040	47,200	48,000	15.0	1.7
Sales/Marketing	42,400	46,375	48,941	9.4	5.5
Teaching/Training	38,400	46,726	49,400	21.7	5.7

Source: 1987 Engineering Salary Survey & Career Planning Guide, Source Engineering Personnel Services.

TABLE 151

MEDIAN ANNUAL COMPENSATION OF EMPLOYED ENGINEERS BY POSITION AND WORK ACTIVITY, 1987

POSITION	WORK ACTIVITY	
	DESIGN AND DEVELOPMENT	MANUFACTURING, TEST, QUALITY CONTROL
Associate Engineer*		
1-2 Years	$29,000	$28,000
2-4 Years	32,000	31,000
Engineer/Senior Engineer*		
1-2 Years	32,000	30,500
2-4 Years	35,000	33,300
4-6 Years	39,000	37,000
6+ Years	45,000	42,100
Principal Engineer Project Leader	48,000	
Group Leader/Section Head	54,000	
Engineering Manager	61,000	
Manufacturing Manager		51,100
Director of Engineering/VP	72,000	
Director of Manufacturing/VP		67,000

*For B.S. degreed Engineers

TABLE 152

MEDIAN ANNUAL COMPENSATION OF ENGINEERS EMPLOYED IN SALES/MARKETING BY POSITION, 1987

POSITION	COMPENSATION
Field Engineer	$31,000
Applications Engineer	37,000
Product Manager	47,000
Sales Engineer	45,000
Sales/Marketing Manager	60,000
Director of Sales/Marketing/VP	75,000

SOURCE: The Hay Group, Inc., Engineering Compensation Comparison, 1986

TABLE 153

WEIGHTED AVERAGE ANNUAL SALARY AND COMPENSATION OF ENGINEERS BY WORK FOCUS AND LEVEL OF RESPONSIBILITY, 1986

WORK FOCUS	Entry Level Engineer	Journeyman Engineer	Engrg. Supvr.	Engrg. Manager
APPLIED RESEARCH				
Salary	$30,500	$40,600	$51,800	$67,800
Compensation	30,700	40,700	52,600	71,200
BASIC RESEARCH				
Salary	32,000	39,100	46,800	61,600
Compensation	32,000	39,100	46,900	62,100
FACILITY DESIGN/ CONST.				
Salary	31,000	39,700	52,200	69,700
Compensation	31,000	39,700	52,300	71,000
FIELD INSTALLATION & SERVICE				
Salary	30,100	35,800		
Compensation	30,900	35,900		
MANUFACTURING				
Salary	30,000	37,700	49,800	60,800
Compensation	31,200	40,100	51,100	67,000
PLANT OPERATIONS				
Salary	31,000	39,200	50,100	58,500
Compensation	31,100	39,600	50,600	59,700
PROCESS DEVELOPMENT				
Salary	27,700	34,800	48,200	61,000
Compensation	27,900	35,200	49,200	62,000
PRODUCT DEVELOPMENT				
Salary	32,400	40,300	51,700	64,800
Compensation	32,400	40,300	51,900	75,800
TECHNICAL SALES and/or SERVICES				
Salary	28,600	36,000	44,300	62,000
Compensation	28,600	36,000	44,300	62,000
UTILITY OPERATIONS				
Salary	31,200	38,600	48,400	64,600
Compensation	31,200	38,800	48,600	65,700
Other				
Salary	31,700	39,300	50,600	65,200
Compensation	31,900	39,400	50,700	66,300

SOURCE: The Hay Group, Inc., Engineering Compensation Comparison, 1986

TABLE 154

WEIGHTED AVERAGE ANNUAL SALARY AND COMPENSATION OF ENGINEERS BY DISCIPLINE AND LEVEL OF RESPONSIBILITY, 1986

DISCIPLINE	Entry Level Engineer	Journeyman Engineer	Engrg. Supvr.	Engrg. Manager
AEROSPACE				
Salary	$33,000	$39,700	$50,800	$67,900
Compensation	33,000	39,800	50,800	69,000
CHEMICAL				
Salary	30,900	38,700	49,900	67,800
Compensation	31,000	38,800	50,100	71,200
CIVIL				
Salary	29,900	38,500	49,300	65,700
Compensation	29,900	38,500	49,500	68,600
COMPUTER/SYSTEMS				
Salary	28,900	35,300	48,900	60,000
Compensation	29,000	35,700	49,800	62,700
ELECTRICAL				
Salary	31,100	39,600	50,500	63,200
Compensation	31,200	39,600	50,700	65,100
INDUSTRIAL				
Salary	29,900	35,900	47,400	60,900
Compensation	31,200	38,400	48,800	70,400
MECHANICAL				
Salary	31,400	39,400	50,400	65,300
Compensation	31,400	39,400	50,800	73,700
METALLURGICAL				
Salary	31,200	38,400	50,100	71,200
Compensation	31,300	38,400	50,400	81,100
NUCLEAR				
Salary	32,500	41,500	50,100	64,100
Compensation	32,600	41,700	50,300	64,100
OTHER				
Salary	31,500	39,000	49,600	64,700
Compensation	31,700	39,100	50,100	69,000

SOURCE: The Hay Group, Inc., Engineering Compensation Comparison, 1986

TABLE 155

WEIGHTED AVERAGE ANNUAL SALARY AND COMPENSATION OF ENGINEERS BY REGION AND LEVEL OF RESPONSIBILITY, 1986

REGION	Entry Level Engineer	Journeyman Engineer	Engrg. Supvr.	Engrg. Manager
NEW ENGLAND				
Salary	$32,400	$37,200	$47,900	$70,500
Compensation	32,700	37,300	48,100	75,800
NEW YORK/NEW JERSEY				
Salary	33,100	41,600	52,400	68,400
Compensation	33,100	41,700	52,700	70,700
MID-ATLANTIC				
Salary	31,200	38,800	49,600	67,100
Compensation	31,200	38,900	49,700	70,700
SOUTH				
Salary	30,900	39,500	50,400	65,200
Compensation	30,900	39,500	50,600	66,800
MIDWEST				
Salary	31,800	37,500	50,200	67,500
Compensation	32,200	38,000	51,000	78,200
PLAINS				
Salary	31,200	38,500	50,600	67,400
Compensation	31,500	38,500	51,600	76,300
SOUTHWEST				
Salary	32,700	36,200	49,100	66,400
Compensation	32,700	36,600	49,800	69,800
WEST				
Salary	30,700	38,800	49,500	65,800
Compensation	30,700	38,900	49,800	66,800

SOURCE: The Hay Group, Inc., Engineering Compensation Comparison, 1986

TABLE 156

WEIGHTED AVERAGE ANNUAL SALARY AND COMPENSATION OF ENGINEERS BY INDUSTRY AND LEVEL OF RESPONSIBILITY, 1986

INDUSTRY	Entry Level Engineer	Journey-man Engineer	Engrg. Supvr.	Engrg. Manager
CHEMICAL-PETROLEUM				
Salary	34,400	42,700	55,400	75,600
Compensation	34,400	42,800	56,100	82,200
CONSUMER				
Salary	30,700	39,800	49,500	67,900
Compensation	31,000	40,100	50,800	80,100
CONSULTING R&D				
Salary	28,500	37,900	47,100	61,000
Compensation	28,600	38,000	47,300	63,400
HEAVY MANUFACTURING				
Salary	31,300	37,700	49,000	67,800
Compensation	31,300	37,800	49,200	71,700
LIGHT MANUFACTURING				
Salary	29,700	37,400	47,500	60,900
Compensation	30,300	38,400	48,600	68,500
HIGH TECHNOLOGY				
Salary	31,800	36,600	49,000	65,400
Compensation	31,800	36,900	49,700	67,800
UTILITIES				
Salary	34,100	40,200	51,600	72,100
Compensation	34,600	40,300	51,800	72,700

SOURCE: The Hay Group, 1986 High Technology Management Compensation Survey.

TABLE 157

NUMBER, MEDIAN AND AVERAGE BASE SALARY IN THE HIGH TECHNOLOGY INDUSTRY BY POSITION TITLE, JUNE 1986

POSITION TITLE	MEDIAN	AVERAGE	NUMBER
Chief Executive Officer	$290,000	$273,300	33
Chief Operating Officer	260,000	241,100	19
Division General Manager	110,200	115,900	124
Chief Administrative Officer	125,000	132,100	17
Head of Information Systems & Data Processing	74,900	80,900	42
Head of Corporate Planning	87,800	100,200	10
Head of Human Resources	83,900	88,300	54
Head of R&D	123,700	135,000	18
Head of Engineering	90,000	96,500	37
Head of Process Engineering	71,000	75,100	9
Head of Product Engineering	68,300	69,000	16
Head of Design Engineering	90,800	92,100	12
Head of Hardware Engineering	79,900	81,200	16
Head of Software Engineering	81,200	92,300	23
Head of Test Engineering	67,200	68,000	10
Head of Manufacturing Engrg.	66,700	68,500	13
Head of Operations	98,000	116,300	27
Head of Manufacturing	95,000	96,400	28
Head of Quality Assurance/Control	71,800	75,200	39

SOURCE: American Chemical Society, 1987 Salaries of Non-Academic Chemical Engineers: Analysis of the American Chemical Society's 1987 Survey of Salaries and Employment, July 1987.

TABLE 158

MEDIAN AND MEAN SALARIES IN INDUSTRY OF EMPLOYED FULL-TIME CHEMICAL ENGINEERS* BY DEGREE LEVEL AND SEX, 1987

DEGREE LEVEL	BACHELOR'S		MASTER'S		Ph.D.	
	Median	Mean	Median	Mean	Median	Mean
TOTAL	$47,112	51,271	$51,000	$56,449	$61,000	$66,281
Men	48,600	52,586	52,000	57,576	62,200	67,143
Women	30,630	32,780	38,500	40,661	44,100	47,151

* Includes only members of the American Chemical Society.

TABLE 159

MEDIAN AND MEAN SALARIES OF CHEMICAL ENGINEERS* EMPLOYED FULL-TIME IN INDUSTRY BY HIGHEST DEGREE, SEX AND YEARS SINCE B.S., 1987

YEARS SINCE B.S.	BACHELOR'S		MASTER'S		Ph.D.	
	Men	Women	Men	Women	Men	Women
2 - 4	$29,000	$29,520	$32,100	$	$	$
5 - 9	38,000		37,000	37,455	44,410	
10 - 14	44,000		47,722		51,000	
15 - 19	47,900		52,000		60,000	
20 - 24	52,000		58,400		66,972	
25 - 29	55,000		57,250		69,000	
30 - 34	60,252		65,000		75,000	
35 - 39	58,000		59,500		74,898	
> = 40	58,680		60,400		67,500	
All Years	48,600	30,630	52,000	38,500	62,200	44,100

*Includes only members of the American Chemical Society.
NOTE: Blanks indicate less than 15 respondents.

TABLE 160

MEDIAN AND MEAN SALARIES IN INDUSTRY OF EMPLOYED FULL-TIME CHEMICAL ENGINEERS* BY TYPE OF INDUSTRY AND DEGREE LEVEL, 1987

TYPE OF INDUSTRY	BACHELOR'S		MASTER'S		Ph.D.	
	Median	Mean	Median	Mean	Median	Mean
Non-Manufacturing	$47,770	$51,617	$49,000	$58,694	$58,100	$67,322
Basic Chemicals	57,400	71,072	60,000	64,100	64,900	78,929
Specialty Chemicals	50,000	52,873	55,000	59,776	58,750	61,814
Electronics	38,760	40,770	42,500	44,583	49,600	54,442
Petroleum/Natural Gas	57,500	60,423	59,110	64,851	70,000	71,470
Pharmaceuticals	51,250	51,347	45,800	51,840	61,500	63,525
Plastics	45,000	47,399	50,000	55,508	55,000	58,629
Other Manufacturers**	43,590	48,431	50,000	51,462	61,000	63,842

* Includes only members of the American Chemical Society.
**Includes agricultural chemicals, biochemicals, coatings and paints, food, glass, paper, rubber, soaps and detergents, steel or ferrous metals, and other metals and minerals.

SOURCE: American Chemical Society, 1987 Salaries of Non-Academic Chemical Engineers: Analysis of the American Chemical Society's 1987 Survey of Salaries and Employment, July 1987.

TABLE 161

MEDIAN AND MEAN SALARIES IN INDUSTRY OF EMPLOYED FULL-TIME CHEMICAL ENGINEERS* BY WORK FUNCTION AND DEGREE LEVEL, 1987

WORK FUNCTION	BACHELOR'S		MASTER'S		Ph.D.	
	Median	Mean	Median	Mean	Median	Mean
Management R&D	$65,882	$62,160	$70,000	$71,403	$71,600	$77,561
Basic Research					46,700	54,531
Applied Research	39,388	43,164	44,000	45,678	55,000	57,864
General Management	68,726	61,000	70,750	75,383	84,750	97,081
Marketing	49,850	51,916	55,000	53,817	66,000	66,550
Production & Quality Control	39,250	41,706	48,600	47,864		
Consulting	39,500	42,409	52,350	66,232	60,500	63,938
Other**	45,100	46,239	49,150	50,072	60,000	63,376

* Includes only members of the American Chemical Society.

**Includes Forensics, Writing, Chemistry Information Services, Computer Programming and basic research at the bachelor's and master's level but production at the Ph.D. level.

TABLE 162

MEDIAN AND MEAN SALARIES OF CHEMICAL ENGINEERS* EMPLOYED FULL-TIME BY GEOGRAPHICAL REGION AND DEGREE LEVEL, 1987

GEOGRAPHIC REGION	BACHELOR'S		MASTER'S		Ph.D.	
	Median	Mean	Median	Mean	Median	Mean
Pacific	$44,500	$51,444	$50,000	$53,265	$62,350	$65,010
Mountain	47,556	42,050				
West No. Central	36,600	42,570	50,000	53,704	62,000	62,180
West So. Central	57,000	59,280	57,550	58,025	60,000	64,012
East No. Central	44,000	49,940	52,000	55,641	60,700	65,041
East So. Central	52,000	50,913				
Middle Atlantic	49,000	52,984	51,000	59,532	64,700	67,497
South Altantic	45,500	48,469	52,690	57,134	58,200	68,953
New England	46,000	52,473	48,300	43,596	61,000	68,577

* Includes only members of the American Chemical Society.

NOTE: Blanks indicate less than 15 respondents.

SOURCE: American Institute of Industrial Engineers, Inc., Compensation of Industrial Engineers, Tenth Edition, April 1987.

TABLE 163

NUMBER AND TOTAL ANNUAL INCOME OF INDUSTRIAL ENGINEERS BY TYPE OF EMPLOYER, JANUARY 1, 1987

TYPE OF EMPLOYER	Total Employees	Median Income	Mean Income
MFG./EXTRACTIVE ORGANIZATIONS	**4,266**	**$39,500**	**$44,117**
Aerospace & Aircraft Products	536	38,892	42,374
Apparel & Other Textile Products	152	38,500	41,592
Chemical, Pharmaceutical & Allied Products	265	48,200	52,298
Electrical & Electronic Equipment	844	39,637	43,818
Fabricated Metal Products	479	37,200	42,607
Food, Beverage & Tobacco Products	254	44,950	50,110
Furniture & Wood Products	77	35,000	43,200
Instruments, Controls & Related Products	60	38,350	44,468
Machinery (Except Electrical)	125	40,000	44,730
Paper & Allied Products	128	40,000	45,688
Petroleum & Coal Products	27	46,000	48,772
Primary Metal Industries	155	40,150	43,247
Printing & Publishing	83	40,000	42,033
Rubber & Plastics Products	166	38,486	41,192
Stone, Clay & Glass Products	58	40,050	46,651
Textile Mill Products	79	35,000	41,562
Transportation Equipment	359	39,000	44,692
NON-MFG./EXTRACTIVE ORGANIZATIONS	**2,029**	**45,585**	**48,075**
Banks & Financial Organizations	77	40,000	41,105
College & Universities	315	47,400	50,515
Communications Services (T.V., Radio, Telephone & Telegraph)	61	43,585	45,377
Consultants (Engineering)	200	46,140	54,477
Consultants (Non-Engineering)	128	55,000	62,113
Government - Federal (including Military & Postal Service)	346	40,012	42,044
Government - State & Local	50	38,720	39,591
Health Care Organizations (Hospitals & Nursing Homes)	172	38,850	42,187
Mechandising (Wholesale & Retail)	89	37,440	47,582
Transportation Services	143	46,800	50,898
Utilities	238	44,888	45,619

SOURCE: American Institute of Industrial Engineers, Inc., Compensation of Industrial Engineers, Tenth Edition, April 1987.

TABLE 164

NUMBER AND TOTAL ANNUAL INCOME OF INDUSTRIAL ENGINEERS BY METROPOLITAN AREA, JANUARY 1, 1987

METROPOLITAN/ GEOGRAPHIC AREA	Total Employees Reported	Median Income	Mean Income
NORTHEASTERN STATES	**1,369**	**$41,482**	**$46,931**
Boston & Vicinity	154	40,009	44,217
New York City & Vicinity (NY/NJ/CT)	409	47,500	52,403
Philadelphia & Vicinity (PA/NJ)	219	38,250	44,244
Pittsburgh & Vicinity (PA/OH)	122	38,500	43,945
Northeastern States (excluding specific areas above)	465	39,828	45,066
SOUTHEASTERN STATES	**1,633**	**39,600**	**43,810**
Atlanta & Vicinity	144	40,000	46,882
Washington/Baltimore & Vicinity (DC/MD/VA)	225	43,142	48,323
State of Florida	253	40,100	43,763
Southeastern States (excluding specific areas above)	1,011	38,800	42,379
GREAT LAKES STATES	**1,355**	**40,000**	**44,909**
Chicago & Vicinity (IL/IN)	330	40,628	48,689
Detroit & Vicinity	203	43,800	47,120
State of Ohio	353	39,500	42,976
Great Lakes States (excluding specific areas above)	469	39,000	42,748
NORTH CENTRAL STATES	**495**	**38,800**	**42,181**
Minneapolis/St. Paul & Vicinity (MN/WI)	102	38,976	41,022
St. Louis & Vicinity (MO/IL)	98	38,889	44,292
North Central States (excluding specific areas above)	295	38,750	41,881
SOUTH CENTRAL STATES	**534**	**41,000**	**44,790**
Dallas/Ft. Worth & Vicinity	204	40,000	43,648
Houston & Vicinity	77	49,000	50,211
South Central States (excluding specific areas above)	253	41,000	44,061
MOUNTAIN STATES	**243**	**43,380**	**46,052**
Denver/Boulder/Colorado Springs/ Pueblo & Vicinity	63	43,000	45,768
Phoenix & Vicinity	78	42,000	46,035
Mountain States (excluding specific areas above)	102	44,200	46,240
PACIFIC STATES	**627**	**45,000**	**49,835**
Los Angeles/San Diego & Vicinity	366	43,631	49,709
San Francisco/Oakland & Vicinity	190	47,900	51,049
Pacific States (excluding specific areas above)	71	42,000	47,239

SOURCE: American Institute of Industrial Engineers, Inc., Compensation of Industrial Engineers, Tenth Edition, April 1987.

TABLE 165

NUMBER AND TOTAL ANNUAL COMPENSATION OF INDUSTRIAL ENGINEERS BY DEGREE LEVEL, JANUARY 1, 1987

DEGREE LEVEL	Total Employees	Median Income	Mean Income
Ph.D.	348	$51,788	$57,419
M.S., M.E., or M.A. Degree	1,119	46,000	51,082
MBA	817	46,860	52,043
B.S. (Engineering)	2,613	36,500	41,414
B.A./B.S. (Non-Engineering)	880	39,000	42,315
Less than Bachelor's Degree	450	36,290	39,670

TABLE 166

NUMBER AND TOTAL ANNUAL INCOME OF INDUSTRIAL ENGINEERS BY YEARS OF EXPERIENCE, JANUARY 1, 1987

YEARS OF EXPERIENCE	Total Employees Reported	Median Income	Mean Income
Under One Year	148	$28,445	$28,860
One Year	142	28,700	28,063
Two Years	386	29,550	29,528
Three Years	362	31,174	32,863
Four Years	325	33,600	34,124
5 through 9 Years	1,340	37,800	39,012
10 through 14 Years	1,039	42,500	45,150
15 through 19 Years	835	47,712	51,405
20 through 24 Years	608	50,000	55,039
25 through 29 Years	515	52,000	59,408
30 Years and Over	593	53,000	62,119

SOURCE: American Institute of Industrial Engineers, Inc., Compensation of Industrial Engineers, Tenth Edition, April 1987.

TABLE 167

NUMBER AND TOTAL ANNUAL INCOME OF INDUSTRIAL ENGINEERS BY PRIMARY ACTIVITY OR SPECIALTY, JANUARY 1, 1987

PRIMARY ACTIVITY OR SPECIALITY	Total Employees Reported	Median Income	Mean Income
Cost Control/Reduction Programs	486	$39,000	$42,049
Engineering Economics	86	39,091	43,510
Facility Planning Design, Layout Environment Protection	385	40,000	43,184
Management Information Systems	312	42,500	47,149
Computer Operations, Systems, Software	236	37,500	42,885
Organizations, Admin.-IE Dept., Plant	667	48,300	52,821
Materials Handling	139	40,380	44,991
Warehousing, Shipping, Receiving	76	39,000	44,883
Methods, Engineering, Proc. Design, Value Analysis, Human Productivity	718	36,944	39,452
Manufacturing Engineering, Automation	565	39,000	43,363
Maintenance, Plant Engineering	127	42,000	45,081
Operations Supervision, Assembly, Clerical, Office	134	47,500	52,264
Mathematical Models, Networks, Simulation	185	42,750	46,442
Production and Inventory Control, Scheduling, Forecasting	171	41,000	44,532
Materials Management	81	43,000	46,270
Quality Control, Reliability	202	39,735	42,303
Work Measurement, Standards Performance Measures	654	35,000	36,918
Incentive Plans, Groups, Individ., Supvr.	69	38,100	41,9792

SOURCE: Abbott Langer & Associates, Compensation of Industrial Engineers, Tenth Edition, April 1987.

TABLE 168

NUMBER AND TOTAL ANNUAL INCOME OF INDUSTRIAL ENGINEERS BY PRIMARY JOB FUNCTION, JANUARY 1, 1987

PRIMARY JOB FUNCTION	Total Employees Reported	Median Income	Mean Income
Corporate Official, General Mangement	465	$65,000	$75,316
Functional Management, Department Head	1,271	50,000	53,147
Supervisor of Technical or Professional Personnel	713	43,420	45,542
Engineer, Analyst or Other Professional	2,905	34,736	36,033
Consultant	459	47,500	52,447
Educator	298	46,700	49,212

SOURCE: Abbott, Langer & Associates, Compensation in Manufacturing, (Engineers and Managers), Seventh Edition, 1987.

TABLE 169

NUMBER, TOTAL ANNUAL BASE SALARY, AND TOTAL ANNUAL COMPENSATION OF ENGINEERS EMPLOYED IN MANUFACTURING BY YEARS OF EXPERIENCE, JANUARY 1, 1987

YEARS OF EXPERIENCE	BASE SALARY			TOTAL COMPENSATION		
	No.	Median	Mean	No.	Median	Mean
Under 3 Years	124	$28,275	$28,957	124	$28,679	$29,488
3-4 Years	123	32,000	31,141	123	32,499	31,692
5-9 Years	307	35,178	35,097	307	35,879	35,359
10-14 Years	128	35,580	36,494	128	35,800	37,140
15-19 Years	71	36,290	35,991	71	37,000	36,776
20-24 Years	57	37,200	38,085	57	37,800	38,800
25-29 Years	38	36,601	36,872	38	37,411	37,805
30 Years or More	48	36,241	36,744	48	36,810	37,017

TABLE 170

NUMBER, TOTAL ANNUAL BASE SALARY, AND TOTAL ANNUAL COMPENSATION OF ENGINEERS EMPLOYED IN MANUFACTURING BY BRANCH OF ENGINEERING, JANUARY 1, 1987

BRANCH OF ENGINEERING	BASE SALARY			TOTAL COMPENSATION		
	No.	Median	Mean	No.	Median	Mean
Chemical Engineering	16	$39,820	$40,413	16	$39,820	$40,413
Cost Value Engineering	6	28,449	28,575	6	28,838	29,919
Elec./Electronic Engrg.	134	34,134	34,542	134	34,284	34,904
Engineering Technology	30	34,800	33,947	30	34,800	34,144
Industrial Engineering	116	32,750	32,421	116	33,000	32,996
Manufacturing Engrg.	187	32,350	33,402	187	34,000	3[illegible],340
Mechanical Engrg.	279	37,440	36,376	279	38,000	36,721

SOURCE: Abbott, Langer & Associates, Compensation in Manufacturing, (Engineers and Managers), Seventh Edition, 1987.

TABLE 171

NUMBER, TOTAL ANNUAL BASE SALARY, AND TOTAL ANNUAL COMPENSATION OF ENGINEERS EMPLOYED IN MANUFACTURING BY TYPE OF PRODUCT MANUFACTURED, JANUARY 1, 1987

TYPE OF PRODUCT MANUFACTURED	BASE SALARY			TOTAL COMPENSATION		
	No.	Median	Mean	No.	Median	Mean
Aerospace/Aircraft Electrical/Electronics Prod.	355	$35,000	$34,642	355	$35,000	$34,823
Apparel/Textile Products/ Textile Mill Products	62	37,000	36,117	62	37,010	36,478
Chemical/Pharmaceutical/ Rubber/Plastic Products	38	35,448	38		35,448	35,915
Fabricated Metal Products	176	33,849	34,564	176	35,612	36,063
Food/Beverage/Tobacco Products	22	37,750	37,869	22	37,750	38,891
Furniture & Wood Products	22	24,190	23,729	22	24,190	24,523
Machinery & Heavy Equipment	84	35,640	36,076	84	35,640	36,076
Other (or Mixed) Manufactured Products	166	32,425	32,630	166	32,875	32,902

TABLE 172

NUMBER, TOTAL ANNUAL BASE SALARY, AND TOTAL ANNUAL COMPENSATION OF ENGINEERS EMPLOYED IN MANUFACTURING BY EDUCATION LEVEL, JANUARY 1, 1987

EDUCATION LEVEL	BASE SALARY			TOTAL COMPENSATION		
	No.	Median	Mean	No.	Median	Mean
MBA Degree	15	$34,944	$37,515	15	$37,000	$38,414
M.S. in Engineering	24	36,665	38,264	24	36,665	38,663
M.A./M.S. (Non-Engrg or MBA)	7	28,632	35,036	7	28,632	36,465
Bachelor Degree (Engrg.)	456	36,437	35,953	456	36,756	36,351
BA/BS (Non-Engineering)	91	31,000	30,540	91	31,000	31,276
A.A. (2-Year) Degree	110	32,728	32,287	110	33,350	32,661
Some College (No Degree)	125	32,959	32,025	125	37,371	32,759
No College	81	34,320	34,249	81	35,100	34,586

SOURCE: Abbott, Langer & Associates, Compensation in Manufacturing, (Engineers and Managers), Seventh Edition, 1987.

TABLE 173

NUMBER, TOTAL ANNUAL BASE SALARY, AND TOTAL ANNUAL COMPENSATION OF ENGINEERS EMPLOYED IN MANUFACTURING BY GEOGRAPHIC AREA, JANUARY 1, 1987

GEOGRAPHIC AREA	BASE SALARY			TOTAL COMPENSATION		
	No.	Median	Mean	No.	Median	Mean
NORTHEASTERN STATES	**147**	**$33,000**	**$33,514**	**147**	**$33,705**	**$34,011**
State of Connecticut	63	33,750	34,661	63	33,705	34,709
State of New York	33	28,600	32,697	33	29,077	33,245
State of Pennsylvania	29	36,921	35,941	29	38,130	37,209
SOUTHERN STATES	**149**	**34,000**	**34,860**	**149**	**34,268**	**35,010**
State of Mississippi	14	29,870	31,339	14	29,870	31,339
State of North Carolina	15	25,000	26,426	15	25,000	26,426
State of South Carolina	36	39,057	39,701	36	39,057	39,960
State of Tennessee	50	34,000	36,115	50	34,150	36,375
GREAT LAKES STATES	**342**	**33,630**	**33,715**	**342**	**34,674**	**34,658**
State of Illinois	67	32,496	32,757	67	32,757	33,082
State of Indiana	67	33,280	34,469	67	38,732	38,259
State of Michigan	13	32,440	31,259	13	31,440	31,429
State of Ohio	97	30,576	31,644	97	31,294	31,930
State of Wisconsin	98	35,640	36,229	98	35,730	36,403
NORTH CENTRAL STATES	**182**	**35,000**	**33,601**	**182**	**35,000**	**33,691**
State of Kansas	110	38,000	34,794	110	38,000	34,830
State of Minnesota	20	36,330	36,046	20	36,660	36,296
State of Missouri	34	28,944	29,452	34	28,944	29,452
SOUTH CENTRAL STATES	**26**	**34,086**	**35,442**	**26**	**34,086**	**35,685**
State of Texas	13	31,798	31,040	13	31,798	31,040
MOUNTAIN STATES	**8**	**31,429**	**29,466**	**8**	**31,429**	**29,466**
PACIFIC STATES	**70**	**41,422**	**40,365**	**70**	**41,422**	**40,380**
California	68	41,777	40,902	68	41,777	40,971

SOURCE: Abbott Langer & Associates, Compensation in Manufacturing, (Engineers and Managers), Seventh Edition 1987

TABLE 174

NUMBER, TOTAL ANNUAL BASE SALARY, AND TOTAL ANNUAL COMPENSATION OF MANAGERIAL PERSONNEL* EMPLOYED IN MANUFACTURING BY EDUCATION LEVEL, JANUARY 1, 1987

EDUCATION LEVEL	BASE SALARY			TOTAL COMPENSATION		
	No.	Median	Mean	No.	Median	Mean
Doctorate	7	58,920	68,020	7	95,594	79,540
MBA Degree	25	57,672	60,435	25	57,672	63,875
M.S. in Engineering	19	58,646	61,355	19	60,610	63,479
M.A./M.S. (Not Engrg. or MBA)	15	64,500	62,983	15	64,500	64,898
Bachelor's in Engineering	200	46,930	49,115	199	47,600	50,525
Bachelor's Degree (Non-Engrg.)	100	48,250	50,189	98	51,826	55,460
A.A. (2-Year) Degree	25	40,734	41,086	25	40,734	41,720
Some College (No Degree)	62	44,642	44,827	62	45,238	47,296
No College	57	42,528	43,102	57	45,000	44,948

* Excludes Foremen and General Foremen.

SOURCE: Institute of Electrical and Electronics Engineers, Inc., *IEEE U.S. Membership Salary and Fringe Benefit Survey, 1987,* May 1987.

TABLE 175

NUMBER, MEDIAN AND MEAN ANNUAL INCOME OF IEEE ENGINEERS HIGHEST DEGREE EARNED, 1986

HIGHEST DEGREE EARNED	Number Reported	Mean Income	Median Income
Doctoral Degree	957	$69,100	$62,000
Professional Engineer	230	57,300	52,300
Master's (Not M.S.E.E. or MBA Degree	692	55,100	50,100
MBA Degree	255	57,200	52,400
M.S.E.E. Degree	1,639	57,300	53,100
B.E.T. or B.S.E.T. Degree	159	37,800	35,000
B.A. Degree	114	50,900	46,300
B.S. Degree	459	47,900	44,000
B.S.E.E. Degree	2,711	48,300	44,200
Two Year Degree	149	46,200	43,800

TABLE 176

NUMBER, MEDIAN AND MEAN ANNUAL INCOME OF IEEE ENGINEERS EMPLOYED FULL-TIME IN AREA OF PRIMARY TECHNICAL COMPETENCE BY AGE, 1986

AGE	Number Reported	Mean Income	Median Income
Under 30 Years	1,383	$35,400	$34,000
30 - 40 Years	2,339	49,000	47,000
40 - 49 Years	1,854	61,300	57,000
50 - 59 Years	1,321	66,600	60,400
Over 60 Years	520	68,100	60,900

TABLE 177

NUMBER, MEDIAN AND MEAN ANNUAL INCOME OF IEEE ENGINEERS EMPLOYED FULL-TIME IN AREA OF PRIMARY TECHNICAL COMPETENCE BY YEARS OF EXPERIENCE, 1986

YEARS OF EXPERIENCE	Number Reported	Mean Income	Median Income
Under Two Years	417	$32,600	$30,000
Three - Four Years	710	36,300	34,000
Five - Seven Years	905	41,800	39,500
Eight - Ten Years	786	48,000	53,100
11 - 15 Years	1,123	54,100	50,500
16 - 20 Years	1,032	60,900	56,800
21 - 25 Years	794	63,700	60,000
26 - 30 Years	785	67,600	60,000
30 Years or More	860	68,700	62,400

SOURCE: Institute of Electrical and Electronics Engineers, Inc., IEEE U.S. Membership Salary and Fringe Benefit Survey, 1987, May 1987

TABLE 178

NUMBER, MEDIAN AND MEAN ANNUAL INCOME OF IEEE ENGINEERS EMPLOYED FULL-TIME BY SEX AND YEARS OF EXPERIENCE, 1986

YEARS OF EXPERIENCE	Number Reported		Mean Income		Median Income	
	Male	Female	Male	Female	Male	Female
<2 Years	383	48	$32,500	$36,500	$30,200	$30,300
3 - 4 Years	678	65	36,900	33,700	34,500	33,000
5 - 7 Years	875	67	42,000	40,900	39,500	40,000
8 - 10 Years	774	40	47,900	45,800	45,800	42,300
11 - 15 Years	1,155	26	54,100	49,600	50,600	46,900
16 - 20 Years	1,085		60,500		56,300	
21 - 25 Years	844		63,100		59,600	
26 - 30 Years	840		66,500		60,000	
>30 Years	917		68,100		62,000	

TABLE 179

NUMBER, MEDIAN AND MEAN ANNUAL INCOME OF IEEE ENGINEERS BY LEVEL OF PROFESSIONAL RESPONSIBILITY, 1986

PROFESSIONAL RESPONSIBILITY LEVEL	Number Reported	Mean Income	Median Income
Engineer 1 (Equivalent to GS-5)	51	$32,000	$29,400
Engineer 2 (Equivalent to GS-7)	219	30,700	30,000
Engineer 3 (Equivalent to GS-9)	645	35,500	33,600
Engineer 4 (Equivalent to GS-11)	1,092	40,800	39,800
Engineer 5 (Equivalent to GS-12)	1,140	47,100	46,000
Engineer 6 (Equivalent to GS-13)	1,380	52,900	50,900
Engineer 7 (Equivalent to GS-14)	1,231	59,900	58,000
Engineer 8 (Equivalent to GS-15)	674	69,300	66,000
Engineer 9 (Equivalent to >GS-15)	476	87,700	78,000
Other	445	70,600	60,000

SOURCE: Institute of Electrical and Electronics Engineers, Inc., IEEE U.S. Membership Salary and Fringe Benefit Survey, 1987, May 1987

TABLE 180

NUMBER, MEDIAN AND MEAN ANNUAL INCOME OF IEEE ENGINEERS BY INDUSTRY OF EMPLOYER, 1986

INDUSTRY OF EMPLOYER	Number Reported	Mean Income	Median Income
Aerospace & Defense	1,608	55,000	52,000
Aircraft	55	46,700	45,300
Business Services	22	76,100	53,900
Chemical & Allied Products	55	56,600	50,000
Communication Services	430	56,500	51,800
Computer & Data Processing Services	144	58,000	50,000
Computer Hardware	560	56,300	52,000
Computer Software	180	55,700	50,900
Consulting Engineers	324	54,400	50,400
Consumer Radio & TV	29	62,900	51,000
Electric Machinery, Equipment	171	54,700	54,400
Electric Measuring Equipment	117	56,200	52,700
Electrical Companies & Systems	510	51,700	49,000
Electrical, Gas & Sanitary Systems	107	50,400	49,000
Electrical & Other Services	129	54,100	58,700
Electronics Components	340	57,900	50,200
Engineering Instrumentation	62	52,300	50,000
Fabricated Metal Products	14	48,900	43,400
Federal Government	523	46,500	44,700
Food & Kindred Products	17	53,800	50,500
Government Support	56	48,400	47,900
Instruments for Physical Measure	129	52,300	56,800
Local Government	30	43,300	42,000
Machinery, Not Electric	14	48,300	45,000
Manufacturing, Not Elsewhere Classified	199	52,300	47,300
Manufacturer of Prof. Instruments	87	48,300	42,400
Medical, Pharmaceutical	111	49,400	45,000
Motor Vehicle	39	48,900	44,200
Nonprofit Educational Agency	102	56,400	46,500
Paper & Applied Products	27	49,100	51,000
Petroleum & Related Products	101	56,900	54,400
Photo Equipment, Supplies	16	56,600	50,700
Power Distribution & Transformers	92	46,600	45,000
Primary Metal Products Systems	357	55,600	50,000
Printed and Allied Products	12	55,800	48,200
Rubber & Plastic Products	20	54,200	50,000
Services Not Elsewhere Classified	22	52,300	49,300
State Government	24	49,600	48,500
Telephone Service	113	56,300	50,800
Telephone & Telegraph	170	58,600	53,400
Television Broadcasting	28	66,800	58,600
Transportation Equipment	33	46,500	46,300

SOURCE: Institute of Electrical and Electronics Engineers, Inc., IEEE U.S. Membership Salary and Fringe Benefit Survey, 1987, May 1987

TABLE 181

NUMBER, MEDIAN AND MEAN ANNUAL INCOME OF IEEE ENGINEERS EMPLOYED FULL-TIME IN AREA OF PRIMARY TECHNICAL COMPETENCE, 1986

PRIMARY TECHNICAL COMPETENCE	Number Reported	Mean Income	Median Income
Acoustics & Signal Processing	131	$52,400	$52,000
Aerospace & Electronic Systems	474	56,800	52,900
Antennas & Propagation	97	56,600	54,000
Broadcasting	25	67,600	60,300
Cable Systems	32	55,700	52,900
Circuits & Systems	300	47,100	44,800
Communications	794	56,500	51,000
Components, Hybrids	98	52,900	49,700
Computer Hardware	377	52,200	45,000
Computer Maintenance	29	42,000	40,000
Computer Operations	43	45,500	43,300
Computer Software	1,030	48,900	46,000
Consumer Electronics	42	62,600	49,400
Control Systems	234	48,600	45,100
Electrical Insulation	22	60,500	58,800
Electromagnetic Compatibility	61	48,600	47,800
Electron Devices	119	58,600	55,300
Energy	51	53,800	48,000
Engineering Management	484	69,400	63,000
Geoscience Elc. & Remote Sensing	27	56,100	57,400
Industrial Electronics	80	48,800	46,400
Industry Application	222	48,500	47,400
Instrumentation & Measurement	194	50,300	48,000
Laser, Electro-Optics	115	57,100	53,100
Magnetics	46	62,500	52,500
Manufacturing Technology	52	58,000	51,100
Medicine & Biology	79	53,100	49,100
Man-machine Interface	23	50,600	50,000
Microwave	128	58,000	51,200
Nuclear and Plasma Sciences	34	62,000	55,700
Power Electronics	72	51,400	50,000
Power Engineering	900	51,400	49,000
Radiation	14	50,000	50,600
Reliability	85	47,700	44,900
Robotics	16	49,300	53,300
Solid-state Circuits	165	56,600	53,000
Sonics & Ultrasonics	32	54,600	53,300
Systems	296	58,600	53,000
Transportation	14	48,800	49,200
Vehicular Technology	12	48,200	46,400
Technical, N.E.C.	138	55,300	52,300
Not-Technical	36	69,800	61,500
Non-E/E Engineer	45	60,700	48,800

SOURCE: Institute of Electrical and Electronics Engineers, Inc., IEEE U.S. Membership Salary and Fringe Benefit Survey, 1987, May 1987.

TABLE 182

NUMBER AND MEAN ANNUAL INCOME OF IEEE ENGINEERS EMPLOYED FULL-TIME IN AREA OF PRIMARY TECHNICAL COMPETENCE BY SELECTED METROPOLITAN AREAS, 1986

GEOGRAPHIC AREA	Number Reported	Mean Income
NORTHEASTERN		
Albany - Schenetady - Troy, NY	63	$53,800
Nassau - Suffolk, NY	152	58,500
New York, NY	182	63,400
Newark, NJ	78	58,500
Boston, MA	214	62,100
Brockton, MA	67	59,900
Lowell, MA-NH	96	56,800
Middlesex - Somerset - Hunterdon, NJ	136	58,300
Monmouth - Ocean, NJ	89	57,900
Rochester, NY	65	55,400
EASTERN		
Philadelphia, PA-NJ	164	56,100
Baltimore, MD	211	55,100
Cleveland, OH	59	50,100
Dayton - Springfield, OH	69	50,900
Pittsburgh, PA	65	49,800
Washington, DC-MD-VA	434	53,700
SOUTHEASTERN		
Atlanta, GA	88	53,900
Huntsville, AL	53	48,300
Raleigh-Durham, NC	74	50,000
CENTRAL		
Aurorp - Elgin, IL	58	50,400
Chicago, IL	95	56,700
Detroit, MI	70	52,500
Milwaukee, WI	57	46,700
Minneapolis - St. Paul, MN-WI	115	51,700
SOUTHWESTERN		
Austin, TX	51	51,600
Colorado Springs, CO	55	51,800
Dallas, TX	84	47,100
Denver, CO	61	49,200
Forth Worth - Arlington, TX	81	47,600
Houston, TX	87	52,200
St. Louis, MO-IL	71	46,100
WESTERN		
Anaheim - Santa Ana, CA	92	55,700
Bremerton, WA	58	49,800
Los Angeles - Long Beach, CA	271	58,900
Oxnard - Ventura, CA	112	58,900
Phoenix, AZ	73	46,700
Portland, OR	53	48,100
San Diego, CA	157	54,500
San Francisco, CA	165	60,800
San Jose, CA	227	60,400
Seattle, WA	45	48,300
Tucson, AZ	56	53,800

SOURCE: Institute of Electrical and Electronics Engineers, Inc., IEEE U.S. Membership Salary and Fringe Benefit Survey, 1987, May 1987.

TABLE 183

NUMBER, MEDIAN AND MEAN ANNUAL INCOME OF IEEE ENGINEERS BY JOB FUNCTION, 1986

JOB FUNCTION	Number Reported	Mean Income	Median Income
Basic Research	248	$59,400	$56,200
Computer Applications	954	47,000	44,000
Consulting	272	60,300	55,400
Design & Development Engineering	1,990	52,000	49,700
Engineering Services Evaluation	360	45,300	43,900
Engineering Systems Planning (Utilities)	523	50,000	47,700
Engineering Systems Planning (not Utilities)	638	51,500	49,400
Engineering Support	28	33,400	32,000
General & Corporate Management	662	81,800	70,000
Manufacturing & Production	119	50,200	48,000
Marketing/Sales	269	58,400	55,600
Operations, Construction & Maintenance (Utilities)	212	48,600	46,200
Operations, Construction & Maintenance (not Utilities)	108	44,100	43,000
Technical Staff	577	52,000	50,400
Other E.E.	99	44,900	41,700
Other Engineers (not E.E.)	29	47,900	44,200
Other (not Covered in Other Categories)	136	61,600	56,200

SOURCE: Institute of Electrical and Electronics Engineers, Inc., *IEEE U.S. Membership Salary and Fringe Benefit Survey, 1987*, May 1987

TABLE 184

NUMBER, MEDIAN AND MEAN ANNUAL INCOME OF IEEE ENGINEERS WHO ARE TEACHERS OR SELF-EMPLOYED FULL-TIME BY YEARS OF EXPERIENCE, 1986

YEARS OF EXPERIENCE	Number Reported	Mean Income	Median Income
Under Two Years			
Teachers	14	$41,300	$39,800
Self-Employed	9		
3 - 4 Years			
Teachers	33	43,700	37,500
Self-Employed	16	72,000	59,600
5 - 7 Years			
Teachers	38	43,200	41,400
Self-Employed	34	54,100	29,100
8 - 10 Years			
Teachers	31	42,600	42,000
Self-Employed	42	60,200	39,000
11 - 15 Years			
Teachers	58	53,300	51,400
Self-Employed	46	87,600	71,700
16 - 20 Years			
Teachers	63	53,700	50,000
Self-Employed	57	68,900	43,700
21 - 25 Years			
Teachers	58	54,900	52,500
Self-Employed	55	78,000	47,700
26 - 30 Years			
Teachers	61	54,500	50,200
Self-Employed	48	92,700	66,100
Over 30 Years			
Teachers	62	58,800	56,800
Self-Employed	109	64,500	56,500

SOURCE: Institute of Electrical and Electronics Engineers, Inc., IEEE National Capital Area Council 1986 Salary and Fringe Benefits Survey, September 1986.

TABLE 185

NUMBER AND WEIGHTED AVERAGE SALARY OF ENGINEERS AND SCIENTISTS IN THE WASHINGTON, D.C. AREA BY GRADE LEVEL (G.S.), 1986

LEVEL*	(G.S.)	PRIVATE INDUSTRY		FEDERAL GOVERNMENT		TOTAL	
		No.	Salary	No.	Salary	No.	Salary
1	5	218	$26,275	0	$	218	$26,275
2	7	205	28,457	33	23,458	238	27,764
3	9	478	32,638	131	27,462	609	31,524
4	11	416	37,189	125	30,659	541	35,680
5	12	419	42,786	130	36,035	549	41,187
6	13	736	45,593	658	44,526	1,394	45,089
7	14	571	54,822	543	53,562	1,114	54,208
8	15	339	64,781	349	63,493	688	64,127
TOTAL		**3,382**	**43,578**	**1,969**	**47,450**	**5,133**	**45,798**

* The eight grades relflect increasing levels of responsibility as defined in the U.S. Department of Labor's survey of Professional, Administrative, Technical and Clerical salaries.

SALARIES OF TECHNICIANS

Engineering technicians employed in research and development receive higher median salaries than do technicians in any other discipline, according to **COMPENSATION AND BENEFITS IN RESEARCH AND DEVELOPMENT** a new survey series by **Abbott, Langer & Associates** covering both salaries and total cash compensation of approximately 5,000 employees employed in research and development. As shown in Table 186, engineering technicians had a median annual salary of $26,360, compared to $18,000 for physical sciences technicians and $15,600 for life sciences technicians. Within the engineering technician disciplines, metallurgical engineering reported the highest median salaries - $32,760 and materials engineering the lowest - $18,074. Within the physical sciences technician group, those in marine sciences learned the least ($17,000) while those in computer science earned the most ($15,280). Within the life sciences, biology technicians reported the highest median salary ($17,654), while those in pharmacology reported the lowest ($14,700).

Technicians working in "other non-manfuacturing organizations" reported the highest median salary ($32,188) and those working in educational institutions earned the least ($16,000) (Table 187). As expected, salaries of technicans increase with years of experience. Those technicians with less than one year of experience earn less than half the salary earned by technicians with 25-29 years of experience (Table 188).

Level of education effects salaries of technicians as shown in Table 189. Geographically, technicians in the Pacific states reported much higher median salaries ($32,188) than did those working in the Northeastern States ($16,740) (Table 190). California leads a selected group of states in paying the highest salaries to technicians as shown in Table 191. Salaries by selected metropolitan area are shown Table 192.

Those technicians working in pure research reported the highest median salary - $32,188, while those working in research and development reported the lowest ($21,190) (Table 193). However, engineering technicians working in development earn the highest salary - $28,630 (Table 194).

In contrast to all technicians, engineering technicians reported the highest salaries working in manufacturing organizations (Table 195) and working in the Northeastern states (Table 196). Salaries of engineering technicians by years of experience and level of education are shown in Tables 197 and 198).

SOURCE: Abbott, Langer and Associates, Compensation and Benefits in Research and Development

TABLE 186

NUMBER, MEDIAN AND MEAN ANNUAL SALARIES OF TECHNICIANS BY DISCIPLINE, 1986

DISCIPLINE	NUMBER	SALARY MEDIAN	SALARY MEAN
ALL ENGINEERING	**461**	**$26,360**	**$25,387**
Agricultural Engineering	12	19,472	19,415
Chemical Engineering	50	19,604	19,935
Electrical/Electronics	36	19,857	22,705
Engineering Technology	8	28,400	29,750
Materials Engineering	6	18,074	18,833
Mechanical Engineering	50	29,465	28,787
Metallurgical Engineering	9	32,760	32,464
ALL LIFE SCIENCES	**468**	**15,600**	**16,472**
Agriculture	91	16,995	16,729
Biochemistry	13	15,727	16,389
Biology	51	17,654	18,891
Biophysics	7	15,475	15,407
Medicine/Osteopathy	34	15,287	15,928
Pharmacology	11	14,700	14,756
Psychology	39	15,224	16,730
Veterinary Medicine	50	15,474	16,008
ALL PHYSICAL SCIENCES	**196**	**18,000**	**19,245**
Chemistry	126	19,565	20,137
Marine Sciences	50	17,000	16,600
Physics	6	21,921	22,118
Computer Science	12	25,280	24,320

TABLE 187

NUMBER, MEDIAN AND MEAN ANNUAL SALARIES OF TECHNICIANS BY TYPE OF EMPLOYER, 1986

TYPE OF EMPLOYER	NUMBER	SALARY MEDIAN	SALARY MEAN
All Manufacturing Organizations	596	$24,649	$24,980
Aerospace/Aircraft/Electrical/ Electronics Manufacturers	127	21,611	22,718
Chemical/Pharmaceutical/Plastics/ Rubber Manufacturers	143	21,950	20,930
Other Manufacturing Organizations	326	28,345	27,033
All Non-Manufacturing Organizations	916	18,000	20,892
Educational Institutions	619	16,000	17,792
Other Non-Mfg. Organizations	297	32,188	27,355

SOURCE: Abbott, Langer and Associates, Compensation and Benefits in Research and Development

TABLE 188

NUMBER, MEDIAN AND MEAN ANNUAL SALARIES OF TECHNICIANS BY YEARS OF EXPERIENCE, 1986

YEARS OF EXPERIENCE	NUMBER	SALARY MEDIAN	SALARY MEAN
Under One Year	129	$15,000	$17,392
One or Two Years	345	15,900	17,013
Three or Four Years	200	19,806	19,659
Five - Nine Years	226	21,974	22,581
10 - 14 Years	288	32,188	29,870
15 - 19 Years	69	24,360	24,978
20 - 24 Years	72	27,570	26,462
25 - 29 Years	54	30,366	29,504
30 Years or More	44	30,060	29,383

TABLE 189

NUMBER, MEDIAN AND MEAN ANNUAL SALARIES OF TECHNICIANS BY LEVEL OF EDUCATION, 1986

LEVEL OF EDUCATION	NUMBER	SALARY MEDIAN	SALARY MEAN
No College	365	$32,188	$28,157
Some College, No Degree	247	21,611	22,409
A.A. (2-Year) Degree	122	23,300	24,100
Bachelor's	439	16,000	17,426
Master's	95	18,194	19,761
Doctorate	60	19,890	20,168

TABLE 190

NUMBER, MEDIAN AND MEAN ANNUAL SALARIES OF TECHNICIANS BY GEOGRAPHIC REGION, 1986

GEOGRAPHIC REGION	NUMBER	SALARY MEDIAN	SALARY MEAN
Northeastern States	559	$16,740	$19,515
Southern States	56	23,700	23,337
Midwestern States	333	25,200	25,362
North Central States	56	20,904	19,465
Southwestern States	105	16,995	17,191
Mountain States	122	21,611	21,855
Pacific States	282	32,188	27,026

SOURCE: Abbott, Langer and Associates, Compensation and Benefits in Research and Development

TABLE 191

NUMBER, MEDIAN AND MEAN ANNUAL SALARIES OF TECHNICIANS BY SELECTED STATES, 1986

STATE	NUMBER	SALARY	
		MEDIAN	MEAN
Arizona	10	$19,860	$20,930
California	192	32,188	31,474
Illinois	42	20,800	21,915
Iowa	33	21,360	21,915
Michigan	77	23,300	24,596
Ohio	127	24,360	24,594
Oregon	65	16,704	16,929
Pennsylvania	356	15,475	16,059
Puerto Rico	5	16,000	15,200
South Carolina	30	23,750	23,408
Texas	64	16,595	16,914

TABLE 192

NUMBER, MEDIAN AND MEAN ANNUAL SALARIES OF TECHNICIANS BY METROPOLITAN AREA, 1986

METROPOLITAN AREA	NUMBER	SALARY	
		MEDIAN	MEAN
Chicago (IL/IN) & Vicinity	102	$29,736	$28,776
Dayton (OH) & Vicinity	118	24,810	24,843
Denver/Colorado Springs (CO) & Vicinity	51	19,500	19,652
Detroit (MI) & Vicinity	26	32,190	31,290
Honolulu (HI) & Vicinity	25	18,780	19,121
Houston (TX) & Vicinity	11	22,200	22,331
Minneapolis/St.Paul (MN/WI) & Vicinity	5	16,140	18,199
New York City (NY) - 5 boroughs	143	28,450	28,028
Oklahoma City (OK) & Vicinity	34	17,548	18,422
Philadelphia (PA/NJ) & Vicinity	312	15,449	15,778
Phoenix (AZ) & Vicinity	9	19,800	19,940
Pittsburgh (PA) & Vicinity	17	22,500	22,002
Portland (OR) & Vicinity	15	16,704	18,027
Sacramento (CA) & Vicinity	18	14,500	14,944
Salt Lake City/Odgen (UT) & Vicinity	56	26,083	24,326
San Jose (CA) & Vicinity	169	32,188	33,428
Washington/Baltimore (DC/VA/MD) & Vicinity	12	26,000	26,257

SOURCE: Abbott, Langer and Associates, Compensation and Benefits in Research and Development

TABLE 193

NUMBER, MEDIAN AND MEAN ANNUAL SALARIES OF TECHNICIANS BY WORK FUNCTION, 1986

WORK FUNCTION	NUMBER	SALARY	
		MEDIAN	MEAN
Pure Research	180	$32,188	$32,621
Applied Research	395	22,682	22,788
Development	181	26,625	27,910
Research & Development	404	21,290	20,800

TABLE 194

NUMBER, MEDIAN AND MEAN ANNUAL SALARIES OF ENGINEERING TECHNICIANS BY WORK FUNCTION, 1986

WORK FUNCTION	NUMBER	SALARY	
		MEDIAN	MEAN
Applied Research	157	$25,200	$25,268
Development	133	28,630	28,859
Research & Development	157	23,240	22,204

TABLE 195

NUMBER, MEDIAN AND MEAN ANNUAL SALARIES OF ENGINEERING TECHNICIANS BY TYPE OF EMPLOYER, 1986

TYPE OF EMPLOYER	NUMBER	SALARY	
		MEDIAN	MEAN
All Manufacturing Organizations	307	$29,818	$26,436
Aerospace/Aircraft/Electrical/ Electronics Manufacturers	122	21,611	22,652
Chemical/Pharmaceutical/Plastics/ Rubber Manufacturers	9	24,300	23,592
Other Manufacturing Organizations	176	29,073	29,205
All Non-Manufacturing Organizations	154	23,130	23,295
Educational Institutions	153	23,160	23,395

SOURCE: Abbott, Langer and Associates, Compensation and Benefits in Research and Development.

TABLE 196

NUMBER, MEDIAN AND MEAN ANNUAL SALARIES OF ENGINEERING TECHNICIANS BY GEOGRAPHIC REGION, 1986

GEOGRAPHIC REGION	NUMBER	SALARY	
		MEDIAN	MEAN
Northeastern States	190	$27,335	$25,842
Southern States	13	25,272	26,791
Midwestern States	173	25,680	25,899
North Central States	11	20,009	19,051
Southwestern States	6	24,824	23,541
Mountain States	68	26,083	23,729

TABLE 197

NUMBER, MEDIAN AND MEAN ANNUAL SALARIES OF ENGINEERING TECHNICIANS BY YEARS OF EXPERIENCE, 1986

YEARS OF EXPERIENCE	NUMBER	SALARY	
		MEDIAN	MEAN
Under One Year	40	$24,060	$22,145
One or Two Years	53	20,640	22,399
Three or Four Years	72	21,611	22,005
Five - Nine Years	104	26,083	25,564
10 - 14 Years	61	26,400	26,600
15 - 19 Years	27	26,760	26,457
20 - 24 Years	33	28,320	27,430
25 - 29 Years	37	31,536	31,205
30 Years or More	27	31,920	31,525

TABLE 198

NUMBER, MEDIAN AND MEAN ANNUAL SALARIES OF ENGINEERING TECHNICIANS BY LEVEL OF EDUCATION, 1986

LEVEL OF EDUCATION	NUMBER	SALARY	
		MEDIAN	MEAN
No College	70	$28,880	$28,476
Some College, No Degree	121	26,083	25,315
A.A. (2-Year) Degree	52	29,130	28,578
Bachelor's	28	28,095	28,174
Doctorate	47	19,500	19,722

FEDERAL SALARIES

On January 1, 1987, the federal government's white-collar workers received a 3% salary increase. Under federal rules to achieve comparability between the pay schedule of federal white-collar workers and industry, a much higher percentage increase could have gone into effect if the President had not submitted an alternate recommendation of 1.3%, which was changed to 3% by the Congress. For 1988, the President has requested a 2% increase. However, Congress, has the last word on salaries and can change this figure. Additionally, the salary ceiling was raised to $70,800. Table 199 presents the white-collar salary schedule effective as of January 1, 1987.

Table 200 presents the number, median grade and average salary of federal white-collar workers by sex in selected occupations for all geographical areas of the U.S. as of October 1, 1985. Women continue to be paid less than men in almost every occupational series listed. In the engineering and architecture series, women's salaries as a percentage of men's ranged from a high of 94.06 in engineering drafting to a low of 62.6% in mining engineering. However, there were only 12 women mining engineers employed by the federal government. In the engineering categories with significant numbers of women, their salaries as a percentage of men's ranged between 70 and 80.

In the physical sciences, workers employed in astronomy and space science reported the highest average salary - $49,571. In this occupation, women earned 82.62 as much as men. As expected, the lowest salaries were reported by technicians.

In the life sciences series, those workers employed in agricultural extension earned the highest average salary - $55,487. This is also the only field in this series in which women earned more than men - $55,688 for women compared to $55,426 for men.

In the math, computer sciences and related groups category, the highest salary went to actuaries ($44,957). In the health sciences series, women earned slightly more than men in a few of the fields in which they dominate. In nursing, women were 91.3% of all nurses employed by the federal government and had an average salary 104.9% of men's - $27,066 compared to $25,800. Other fields in which women dominate and have higher average salaries than men include practical nurse, nurse anesthetist, medical record technician, and dental assistant.

In the social and behavioral sciences, women's salaries were closer to men's in those categories where women were more highly represented and at the lower levels, such as economics assistant where women earned 97.4% as much as men.

The **U. S. Department of Labor** in its **NATIONAL SURVEY OF PROFESSIONAL, ADMINISTRATIVE, TECHNICAL AND CLERICAL PAY** collects data on private industry employment. Table 201 compares that data for selected occupations and levels of responsibility with salaries paid to federal workers as of March 1986.

Salaries of doctoral scientists and engineers employed by the federal government are compared for 1981 through 1985 in Table 202. These data are published by the **National Science Foundation** in its **CHARACTERISTICS OF DOCTORAL SCIENTISTS AND ENGINEERS IN THE UNITED STATES, 1985.** In 1985, the highest median salary was paid to economists ($52,100) while psychologists ($44,100) earned the least.

In **1987 SALARIES OF NON-ACADEMIC CHEMISTS ...**, the **American Chemical Society** analyzed salary information on its members employed in government. By work function, chemists engaged in management activities reported the highest salaries, regardless of degree level. The highest median salary was reported by Ph.D. chemists engaged in the management of R & D while B.S. chemists working in forensic functions earned the least. Salaries of chemists employed in government by years since the B.S. and degree level are shown in Table 204.

SOURCE: U.S. Office of Personnel Management

TABLE 199

ANNUAL SALARIES OF FEDERAL WORKERS UNDER THE GENERAL SCHEDULE BY GRADE AND STEP LEVELS, JANUARY 1, 1987

GS	1	2	3	4	5	6	7	8	9	10
1	$ 9,619	$ 9,940	$10,260	$10,579	$10,899	$11,087	$11,403	$11,721	$11,735	$12,036
2	10,816	11,073	11,430	11,735	11,866	12,215	12,564	12,913	13,262	13,611
3	11,802	12,195	12,588	12,981	13,374	13,767	14,160	14,553	14,946	15,339
4	13,248	13,690	14,132	14,574	15,016	15,458	15,900	16,342	16,784	17,226
5	14,822	15,316	15,810	16,304	16,798	17,292	17,786	18,280	18,744	19,268
6	16,521	17,072	17,623	18,174	18,725	19,276	19,827	20,378	20,929	21,480
7	18,358	18,970	19,582	20,194	20,806	21,418	22,030	22,642	23,254	23,866
8	20,333	21,011	21,689	22,367	23,045	23,723	24,401	25,079	25,757	26,435
9	22,458	23,207	23,956	24,705	25,454	26,203	26,952	27,701	28,450	29,199
10	24,732	25,556	26,380	27,204	28,028	28,852	29,676	30,500	31,324	32,148
11	27,172	28,078	28,984	29,890	30,796	31,702	32,608	33,514	34,420	35,326
12	32,567	33,653	34,739	35,825	36,911	37,997	39,083	40,169	41,255	42,341
13	38,727	40,018	41,309	42,600	43,891	45,182	46,473	47,764	49,055	50,346
14	45,763	47,288	48,813	50,338	51,863	53,388	54,913	56,438	57,963	59,488
15	53,830	55,624	57,418	59,212	61,006	62,800	64,594	66,388	68,182	69,976
16	63,135	65,240	67,345	69,450	71,555*	73,660*	75,765*	77,870*	79,975*	
17	73,958*	76,423*	78,883*	81,353*	83,818*					
18	86,682*									

*The rate of basic pay payable to employees at these rates is limited to the rate payable for level V of the Executive Schedule, which would be $70,800.

SOURCE: Office of Personnel Management, Occupations of Federal White-Collar and Blue-Collar Workers, October 31, 1985.

TABLE 200

NUMBER, MEDIAN GRADE AND AVERAGE SALARY OF FEDERAL CIVILIAN WHITE COLLAR WORKERS BY SEX, ALL AREAS, OCTOBER 1985

OCCUPATION SERIES AND GROUP	TOTAL			MALE		FEMALE		
	Number	Median Grade	Average Salary	Number	Average Salary	Number	Average Salary	Women's Salary as % of Men's
General Engineering	19,569	13.0	$45,615	18,863	$46,103	706	$32,563	70.63
Engineering Technician	26,676	9.0	26,573	24,244	27,154	2,432	19,689	72.51
Safety Engineering	617	12.0	40,087	589	40,599	28	29,326	72.23
Fire Prevention Engineering	133	13.0	40,396	131	40,578	2	28,449	70.11
Materials Engineering	1,145	12.0	40,585	1,029	41,875	116	29,142	69.59
Landscape Architecture	604	12.0	36,506	531	37,455	73	29,603	79.04
Architecture	1,902	12.0	36,926	1,727	37,373	175	32,518	87.01
Construction Control	4,357	9.0	25,074	4,265	25,170	92	20,600	81.84
Civil Engineering	16,775	12.0	38,206	15,847	38,768	928	28,620	73.82
Surveying Technician	1,973	5.0	16,794	1,833	17,102	140	12,756	74.59
Engineering Drafting	1,694	5.0	17,645	1,323	17,877	371	16,815	94.06
Environmental Engineering	2,489	12.0	37,003	2,131	38,350	358	28,983	75.57
Construction Analyst	586	12.0	34,062	566	34,332	20	26,428	76.98
Mechanical Engineering	13,583	12.0	35,618	12,927	36,014	656	27,806	77.21
Nuclear Engineering	2,955	12.0	41,955	1,86	42,414	139	32,651	76.98
Electrical Engineering	4,814	12.0	38,354	4,647	38,670	167	29,561	76.44
Electronics Engineering	24,033	12.0	39,542	22,952	40,024	1,081	29,322	73.26
Electronics Technician	21,153	11.0	32,029	20,555	32,291	598	23,026	71.31
Biomedical Engineering	246	12.0	34,668	212	35,978	34	26,504	73.67
Aerospace Engineering	8,700	13.0	43,272	8,267	43,910	433	31,090	70.80
Naval Architecture	1,333	12.0	40,154	1,251	40,811	82	30,127	73.82
Ship Surveying	136	12.0	36,648	136	36,648			
Mining Engineering	462	12.0	40,011	450	40,404	12	25,292	62.60
Petroleum Engineering	504	13.0	41,351	469	42,307	35	28,545	67.47
Agricultural Engineering	425	11.0	37,195	415	37,444	10	26,861	71.74

NOTE: Median Grade and Average Salary are based on those employees reported by general schedule grades or equivalent salary level.

SOURCE: Office of Personnel Management, Occupations of Federal White-Collar and Blue-Collar Workers, October 31, 1985.

TABLE 200 (continued)

NUMBER, MEDIAN GRADE AND AVERAGE SALARY OF FEDERAL CIVILIAN WHITE COLLAR WORKERS BY SEX, ALL AREAS, OCTOBER 1985

OCCUPATION SERIES AND GROUP	TOTAL			MALE		FEMALE		
	Number	Median Grade	Average Salary	Number	Average Salary	Number	Average Salary	Women's Salary as % of Men's
Ceramic Engineering	58	12.5	$41,902	50	$43,789	8	$30,108	68.76
Chemical Engineering	1,779	12.0	36,842	1,509	38,306	270	28,657	74.81
Welding Engineering	103	12.0	37,147	101	37,235	2	32,673	87.75
Industrial Engineering Tech.	2,723	9.0	27,135	2,388	27,763	335	22,656	81.61
Industrial Engineering	3,061	12.0	35,137	2,776	35,932	285	27,391	76.23
Engineering & Architecture Student Trainee	2,387	4.0	13,514	1,817	13,613	570	13,200	96.97
General Physical Science	5,323	13.0	47,547	4,742	49,101	581	34,859	70.99
Health Physics	599	13.0	40,974	518	42,199	81	33,137	78.53
Physics	4,278	13.0	45,466	4,073	46,066	205	35,640	77.37
Physical Science Technician	4,179	7.0	22,067	3,106	23,194	1,073	18,806	81.08
Geophysics	607	13.0	41,388	552	42,857	55	26,642	62.16
Hydrology	2,249	12.0	36,942	2,049	37,782	200	28,335	75.00
Hydrologic Technician	1,596	8.0	22,034	1,359	22,754	237	17,906	78.69
Chemistry	7,602	12.0	38,680	5,992	40,355	1,610	32,443	80.39
Metallurgy	444	12.0	42,729	426	43,145	18	32,891	76.23
Astronomy & Space Science	543	14.0	49,571	505	50,181	38	41,458	82.62
Meteorology	2,133	13.0	40,788	2,017	41,326	116	31,437	76.07
Meteorological Technician	2,226	10.0	27,085	2,123	27,449	143	21,677	78.97
Geology	2,601	12.0	38,811	2,223	40,208	378	30,599	76.10
Oceanography	761	12.0	40,376	679	41,429	82	31,651	76.40
Navigational Information	497	11.0	30,742	421	31,319	76	27,542	87.94
Cartography	4,985	11.0	30,695	4,077	31,465	908	27,237	86.56
Cartographic Technician	1,967	7.0	22,061	1,355	23,351	612	19,204	82.24
Geodesy	383	12.0	35,703	333	36,591	50	29,791	81.42
Food Technology	184	12.0	39,921	140	42,912	44	30,405	70.85
Forest Prod. Technology	93	13.0	44,321	89	44,745	4	34,902	78.00
Gen. Fish & Wildlife Admin.	172	14.0	53,132	168	43,224	4	49,294	92.62

NOTE: Median Grade and Average Salary are based on those employees reported by general schedule grades or equivalent salary level.

SOURCE: Office of Personnel Management, Occupations of Federal White-Collar and Blue-Collar Workers, October 31, 1985.

TABLE 200 (continued)

NUMBER, MEDIAN GRADE AND AVERAGE SALARY OF FEDERAL CIVILIAN WHITE COLLAR WORKERS BY SEX, ALL AREAS, OCTOBER 1985

OCCUPATION SERIES AND GROUP	TOTAL			MALE		FEMALE		
	Number	Median Grade	Average Salary	Number	Average Salary	Number	Average Salary	Women's Salary as % of Men's
General Biological Science	4,752	12.0	$37,056	3,788	$38,868	974	$30,025	77.25
Microbiology	1,848	12.0	36,371	1,166	39,236	682	31,201	79.52
Biological Technician	5,778	7.0	19,036	3,448	19,860	2,330	17,816	89.71
Pharmacology	439	13.0	42,363	338	43,657	101	38,032	87.12
Agricultural Extension	56	14.0	55,487	43	55,426	13	55,688	100.47
Ecology	325	12.0	36,086	272	37,211	53	30,313	81.46
Zoology	120	13.0	43,605	99	45,536	21	34,502	75.77
Physiology	451	13.0	44,493	367	41,765	84	34,936	83.65
Entomology	745	13.0	41,214	706	41,799	39	30,627	73.27
Plant Protection Technician	184	5.0	15,318	126	16,144	58	13,523	83.76
Botany	173	12.0	35,747	119	38,923	54	28,746	73.85
Plant Pathology	319	13.0	43,309	287	44,771	32	30,193	67.44
Plant Physiology	307	13.0	41,760	273	43,041	34	31,473	73.12
Plant Prot. & Quarantine	1,242	9.0	27,648	1,052	28,448	190	23,216	81.61
Genetics	282	13.0	44,026	247	45,052	35	36,787	81.65
Range Conservation	1,313	11.0	28,222	1,185	28,790	128	22,967	79.77
Range Technician	715	5.0	17,270	623	17,594	92	15,080	85.71
Soil Conservation	4,734	11.0	29,797	4,471	30,236	263	22,339	73.88
Soil Conservation Tech.	2,218	6.0	18,373	2,068	18,618	150	14,997	80.55
Forestry	6,504	11.0	32,801	6,016	33,544	488	23,637	70.47
Forestry Technician	11,955	5.0	17,534	10,137	18,119	1,818	14,272	78.77
Soil Science	1,851	11.0	32,568	1,767	32,837	84	24,715	75.27
Agronomy	359	12.0	36,754	347	37,049	12	28,203	76.12
Agriculture Management	3,801	11.0	27,904	3,411	28,465	390	22,993	80.78
Fishery Biology	1,329	11.0	34,294	1,220	35,067	109	25,648	73.14
Wildlife Refuge Management	558	11.0	30,275	516	30,950	42	21,978	71.01
Wildlife Biology	1,458	11.0	31,818	1,267	32,900	191	24,642	74.90
Animal Science	108	13.0	42,287	102	43,136	6	27,849	65.56
Home Economics	50	11.0	32,902	4	45,686	46	31,791	69.59
Biol. Sci. Student Trainee	398	4.0	12,878	225	12,833	173	12,936	100.80

NOTE: Median Grade and Average Salary are based on those employees reported by general schedule grades or equivalent salary level.

SOURCE: Office of Personnel Management, Occupations of Federal White-Collar and Blue-Collar Workers, October 31, 1985.

TABLE 200 (continued)

NUMBER, MEDIAN GRADE AND AVERAGE SALARY OF FEDERAL CIVILIAN WHITE COLLAR WORKERS BY SEX, ALL AREAS, OCTOBER 1985

OCCUPATION SERIES AND GROUP	TOTAL			MALE		FEMALE		
	Number	Median Grade	Average Salary	Number	Average Salary	Number	Average Salary	Women's Salary as % of Men's
Computer Operation	10,256	7.0	$20,495	5,216	$21,823	5,040	$19,120	87.61
Computer Specialist	40,122	12.00	34,336	27,493	36,713	12,629	29,162	79.43
Computer Science	1,753	11.0	32,158	1,236	34,218	517	27,236	79.60
Computer Clerk & Assistant	10,291	5.0	17,952	2,979	18,657	7,312	17,665	94.68
Administrative Officer	8,460	11.0	33,119	3,805	29,366	4,655	28,013	71.16
Program Management	5,800	14.0	56,124	5,124	57,233	676	47,715	83.37
Management Analysis	15,694	11.0	32,418	8,164	35,657	7,530	28,906	81.07
Communications Mangement	1,933	12.0	38,391	1,760	39,349	173	28,646	72.80
Program Analysis	16,162	12.0	38,133	8,850	42,383	7,312	32,988	77.83
Communications Specialist	2,950	11.0	31,420	2,440	32,616	510	25,697	78.79
Operations Research	4,013	13.0	42,530	3,390	44,382	623	32,449	73.11
Mathematics	3,276	12.0	38,223	2,452	40,100	824	32,678	81.49
Mathematics Technician	112	7.0	19,257	36	18,141	76	19,785	109.06
Mathematics Statistician	997	13.0	40,256	755	42,322	242	33,808	79.88
Statistician	2,584	12.0	39,532	1,781	41,774	803	34,588	82.80
Statistical Assistant	2,206	6.0	19,174	272	19,982	1,934	19,060	95.39
Actuary	131	13.0	44,957	107	56,391	24	38,564	83.13
Accounting	11,198	12.0	34,791	8,006	37,180	3,192	28,799	77.46
Auditing	12,435	12.0	35,564	10,079	37,216	2,356	28,497	76.57
General Attorney	17,796	14.0	48,321	12,962	50,172	4,834	43,360	86.42
Medical Officer	9,600	15.0	60,049	7,864	60,602	1,736	57,542	94.95
Physician's Assistant	1,111	11.0	29,495	802	30,364	309	27,498	90.86
Nurse	39,109	10.0	26,955	3,419	25,800	35,690	27,066	104.91
Practical Nurse	12,974	5.0	16,034	1,248	15,717	11,726	16,068	102.23
Nurse Anesthetist	510	13.0	40,185	206	40,014	304	40,301	100.72
Nursing Assistant	19,675	4.0	15,819	8,033	16,142	11,641	15,597	96.62

NOTE: Median Grade and Average Salary are based on those employees reported by general schedule grades or equivalent salary level.

SOURCE: Office of Personnel Management, Occupations of Federal White-Collar and Blue-Collar Workers, October 31, 1985.

TABLE 200 (continued)

NUMBER, MEDIAN GRADE AND AVERAGE SALARY OF FEDERAL CIVILIAN WHITE COLLAR WORKERS BY SEX, ALL AREAS, OCTOBER 1985

OCCUPATION SERIES AND GROUP	TOTAL			MALE		FEMALE		
	Number	Median Grade	Average Salary	Number	Average Salary	Number	Average Salary	Women's Salary as % of Men's
General Health Science	1,716	12.0	$38,013	1,024	$41,200	692	$33,297	80.82
Medical Technologist	5,114	9.0	24,272	1,617	24,909	3,497	23,977	96.26
Medican Technician	2,373	6.0	18,343	984	19,131	1,389	17,785	92.96
Medical Record Technician	2,387	5.0	16,043	307	15,613	2,080	16,106	103.16
Dental Officer	964	15.0	58,235	913	59,210	51	40,782	68.88
Dental Assistant	2,991	4.0	15,504	201	15,460	2,790	15,507	100.30
Dental Hygiene	395	6.0	17,993	7	18,780	388	17,979	95.73
Dietitian & Nutritionist	1,536	9.0	28,304	75	33,671	1,461	28,028	83.24
Occupational Therapist	736	9.0	24,445	86	25,697	650	24,279	94.48
Physical Therapist	610	9.0	26,152	188	27,947	422	25,352	90.71
Educational Therapist	93	9.0	25,517	38	26,125	55	25,096	96.06
Optometrist	133	13.0	33,425	112	36,169	21	18,792	51.96
Speech Pathology & Audio.	661	12.0	34,907	312	38,817	349	31,412	80.92
Orthotist & Prosthetist	249	9.0	24,725	233	25,115	16	19,051	75.86
Podiatrist	147	14.0	31,040	128	32,427	19	21,702	66.93
Pharmacist	3,290	11.0	30,327	2,352	31,176	938	28,196	90.44
Pharmacy Technician	2,395	5.0	15,500	923	15,686	1,472	15,384	98.07
Veterinary Med. Science	2,082	12.0	39,787	1,923	40,353	159	32,940	81.63
Industrial Hygiene	1,012	12.0	33,026	793	34,444	219	27,891	80.97
Consumer Safety	1,517	12.0	39,742	1,208	41,265	309	33,791	81.89
Environ. Health Tech.	150	7.0	19,650	118	20,432	32	16,767	82.06
Health System Admin.	530	14.0	52,115	465	53,906	65	39,305	72.91
Health System Specialist	786	12.0	36,343	538	38,692	248	31,246	80.76
Public Health Program Specialist	1,184	12.0	39,329	870	41,887	314	32,240	76.97
Animal Health Technician	639	7.0	22,495	593	22,739	46	19,341	85.06

NOTE: Median Grade and Average Salary are based on those employees reported by general schedule grades or equivalent salary level.

SOURCE: Office of Personnel Management, Occupations of Federal White-Collar and Blue-Collar Workers, October 31, 1985.

TABLE 200 (continued)

NUMBER, MEDIAN GRADE AND AVERAGE SALARY OF FEDERAL CIVILIAN WHITE COLLAR WORKERS BY SEX, ALL AREAS, OCTOBER 1985

OCCUPATION SERIES AND GROUP	TOTAL			MALE		FEMALE		
	Number	Median Grade	Average Salary	Number	Average Salary	Number	Average Salary	Women's Salary as % of Men's
Social Science	2,859	12.0	$39,395	1,832	$41,320	1,027	$35,960	87.03
Social Science Aid & Tech.	638	6.0	18,946	288	20,145	350	17,960	89.15
Economist	6,006	13.0	42,323	4,769	44,146	1,237	35,295	79.75
Economics Assistant	69	7.0	20,004	11	20,444	58	19,920	97.44
Social Work	3,945	11.0	31,760	2,109	32,892	1,836	30,460	92.61
Social Services	560	8.0	21,917	184	23,225	376	21,227	91.61
Sociology	78	12.0	40,040	52	42,561	26	34,997	82.23
Foreign Affairs	3,529	14.0	47,360	2,784	49,756	745	38,407	77.19
International Relations	90	14.0	50,045	75	51,972	15	40,412	77.76
Manpower Res. & Analysis	33	13.0	48,489	24	49,169	9	46,676	94.93
Manpower Development	604	13.0	44,220	464	46,826	140	35,581	75.99
Geography	240	12.0	34,100	182	35,776	58	28,841	80.62
Equal Opportunity Complnc.	2,935	12.0	35,543	1,514	38,341	1,421	32,562	84.93
History	674	12.0	35,981	523	37,501	151	30,719	81.92
Psychology	3,428	13.0	41,232	2,693	42,854	735	35,289	82.35
Psychology Aid & Tech.	1,049	7.0	19,790	640	20,042	409	19,395	96.77
General Anthropology	51	13.0	42,715	40	44,445	11	36,421	81.95
Archeology	575	11.0	28,674	399	29,803	176	26,113	87.62
Education Research	90	14.0	52,014	65	54,442	25	45,702	83.95
Education Services	380	9.0	29,612	265	31,344	115	25,602	81.68
General Education/Training	1,020	12.0	36,561	531	41,172	489	31,553	76.64
Education Program	502	13.0	47,463	283	52,083	219	41,493	79.67
School Administration	11		43,364	7	47,294	4	36,488	77.15
Public Health Educator	34	11.0	35,464	17	39,075	17	31,853	81.52
Secretary	98,052	5.0	17,690	1,090	16,208	96,962	17,707	109.25

NOTE: Median Grade and Average Salary are based on those employees reported by general schedule grades or equivalent salary level.

SOURCE: U.S. Department of Labor, National Survey of Professional, Administrative, Technical and Clerical Pay, March 1986.

TABLE 201

COMPARISON OF AVERAGE ANNUAL SALARIES IN PRIVATE INDUSTRY WITH SALARY RATES FOR FEDERAL EMPLOYEES UNDER THE GENERAL SCHEDULE, MARCH 1986

OCCUPATION AND LEVEL*	Salaries in Indus.	Grade	SALARY RATES UNDER THE GENERAL SCHEDULE										
			1	2	3	4	5	6	7	8	9	10	Average Salary**
Computer Programmers I	$20,832	GS-5	$14,390	$14,870	$15,350	$15,830	$16,310	$16,790	$17,270	$17,750	$18,230	$18,710	$16,272
Accountants I	21,024												
Chemists I	22,539												
Computer Operators II	17,219												
Engineers I	27,866												
Engineering Technicians III	23,896												
Drafters IV	24,652												
Computer Programmers II	24,558	GS-7	17,824	18,418	19,012	19,606	20,200	20,794	21,388	21,982	22,576	23,170	20,241
Accountants II	25,554												
Chemists II	27,205												
Computer Operators IV	24,550												
Engineers II	31,194												
Engineering Technicians IV	28,412												
Drafters V	31,004												
Computer Programmers III	29,324	GS-9	21,804	22,531	23,258	23,985	24,712	25,439	26,166	26,893	27,620	28,347	24,521
Accountants III	31,143												
Attorneys I	31,014												
Chemists III	34,141												
Systems Analysts I	29,141												
Engineers III	35,715												
Engineering Technicians V	32,718												
Computer Programmers IV	34,919	GS-11	26,381	27,260	28,139	29,018	29,897	30,776	31,655	32,534	33,413	34,292	29,881
Accountants IV	39,293												
Attorneys II	39,635												
Chemists IV	41,548												
Systems Analyst II	34,881												
Engineers IV	42,677												
Computer Programmers V	52,934	GS-12	31,619	32,673	33,727	34,781	35,835	36,889	37,943	38,997	40,051	41,105	36,176
Accountants V	49,231												
Attorneys III	50,119												
Chemists V	50,678												
Systems Analyst III	41,997												
Engineers V	50,769												
Accountants VI	61,546	GS-13	37,599	38,852	40,105	41,358	42,611	43,864	45,117	46,370	47,623	48,876	43,533
Attorneys IV	63,933												
Chemists VI	60,796												
Systems Analyst IV	49,515												
Engineers VI	58,883												
Attorneys V	78,396	GS-14	44,430	45,911	47,392	48,873	50,354	51,835	53,316	54,797	56,278	57,759	51,791
Chemists VII	74,607												
Systems Analyst V	58,404												
Engineers VII	68,602												
Attorneys VI	101,169	GS-15	52,262	54,004	55,746	57,488	59,230	60,972	62,714	64,4[illegible]6	6[illegible],198	57,940	61,722
Engineers VIII	79,021												
Systems Analysts VI	71,770												

* See Original Survey for definition of levels.   ** Mean salary of all general schedule employees in each grade as of March 31, 1986.

SOURCE: National Science Foundation, Characteristics of Doctoral Scientists and Engineers in the United States, 1985

TABLE 202

NUMBER AND MEDIAN ANNUAL SALARIES OF CIVILIAN DOCTORAL SCIENTISTS AND ENGINEERS EMPLOYED BY THE FEDERAL GOVERNMENT BY FIELD, 1981-85

FIELD	1981				1983				1985			
	Number	%	Percent of total employed	Median annual salary	Number	%	Percent of total employed	Median annual salary	Number	%	Percent of total employed	Median annual salary
TOTAL	**25,124**	**100.0**	7.3	**$40,300**	**25,793**	**100.0**	7.0	**$44,700**	**26,337**	100.0	**6.6**	**$48,400**
PHYSICIAL SCIENTISTS	**4,342**	**17.3**	**6.9**	**40,100**	**4,307**	**16.7**	**6.7**	**44,300**	**4,044**	**15.4**	**6.0**	**49,600**
Chemists	2,132	8.5	5.1	39,100	2,054	8.0	5.0	42,900	1,752	6.7	4.0	47,400
Physicists/Astronomers	2,210	8.8	10.4	42,200	2,253	8.7	9.9	45,700	2,292	8.7	9.7	51,100
MATHEMATICAL SCIENTISTS	**852**	**3.4**	**5.5**	**40,200**	**790**	**3.1**	**4.8**	**45,500**	**853**	**3.2**	**5.1**	**48,100**
Mathematicians	553	2.2	4.2	40,800	499	1.9	3.7	44,600	562	2.1	4.0	48,300
Statisticians	299	1.2	11.7	39,200	291	1.1	10.4	46,700	291	1.1	10.4	47,100
COMPUTER/INFO. SPECIALISTS	**355**	**1.4**	**3.9**	**38,700**	**490**	**1.9**	**4.0**	**45,900**	**692**	**2.6**	**4.6**	**50,500**
ENVIRONMENTAL SCIENTISTS	**3,075**	**12.2**	**19.3**	**40,700**	**3,102**	**12.0**	**18.8**	**45,900**	**3,309**	**12.6**	**19.1**	**50,000**
Earth Scientists	2,066	8.2	17.2	40,900	2,176	8.4	17.4	46,100	2,384	9.1	18.1	50,200
Oceanographers	367	1.5	20.5	40,200	274	1.1	15.7	41,500	445	1.7	22.7	50,300
Atmospheric Scientists	642	2.6	30.2	41,200	652	2.5	29.6	48,000	480	1.8	22.6	47,600
ENGINEERS	**3,802**	**15.1**	**6.7**	**42,600**	**3,843**	**14.9**	**6.2**	**46,500**	**3,807**	**14.5**	**5.8**	**50,800**
LIFE SCIENTISTS	**7,225**	**28.8**	**8.5**	**38,100**	**7,771**	**30.1**	**8.4**	**42,700**	**7,962**	**30.2**	**7.8**	**46,600**
Biological Scientists	4,149	16.5	8.4	37,600	4,622	17.9	8.4	42,000	4,790	18.2	8.0	45,600
Agricultural Scientists	2,053	8.2	15.2	38,100	2,036	7.9	14.0	43,400	2,055	7.8	13.2	48,200
Medical Scientists	1,023	4.1	4.7	41,100	1,113	4.3	4.8	49,000	1,117	4.2	4.2	48,700
PSYCHOLOGISTS	**1,211**	**4.8**	**2.8**	**39,000**	**1,191**	**4.6**	**2.6**	**43,800**	**1,049**	**4.0**	**2.0**	**44,100**
SOCIAL SCIENTISTS	**4,261**	**17.0**	**7.7**	**43,900**	**4,299**	**16.7**	**7.2**	**45,600**	**4,621**	**17.5**	**7.2**	**48,200**
Economists	1,649	6.6	10.3	45,600	1,692	6.6	10.0	48,900	1,719	6.5	9.6	52,100
Soc./Anthropologists	301	1.2	2.7		121	0.5	1.0		176	0.7	1.4	
Other Social Scientists	2,311	9.2	8.1	44,100	2,486	9.6	8.2	44,700	2,726	10.4	8.2	46,100

NOTE: Percents may not add to 100 because of rounding. Median salaries computed for full-time civilians only. No median was computed for groups with fewer than 20 individuals reporting salary.

SOURCE: American Chemical Society, *1987 Salaries of Non-Academic Chemists: An Analysis of the American Chemical Society's 1987 Survey of Salaries and Employment,* July 1987.

TABLE 203

MEDIAN AND MEAN SALARIES OF FULL-TIME EMPLOYED CHEMISTS* IN GOVERNMENT BY WORK FUNCTION AND DEGREE LEVEL, 1987

WORK FUNCTION	BACHELOR'S		MASTER'S		Ph.D.	
	Median	Mean	Median	Mean	Median	Mean
Management -- R&D	$	$	$	$	$60,000	$60,525
Basic Research	30,000	34,265			50,000	49,350
Applied Research	36,911	37,517	35,000	36,109	47,000	47,380
General Management	37,714	40,819	36,750	39,461	53,010	52,568
Prod. Quality & Control	31,238	32,313				
Forensics	28,650	29,887	29,028	29,038		
Other	28,530	34,388	37,040	37,386	45,128	43,010
All Functions	**32,000**	**34,543**	**34,747**	**35,948**	**50,319**	**50,199**

* Includes only members of the American Chemical Society.
Note: Blanks indicate less than 15 respondents.

TABLE 204

MEDIAN AND MEAN SALARIES OF FULL-TIME EMPLOYED CHEMISTS* IN GOVERNMENT BY HIGHEST DEGREE AND YEARS SINCE B.S., 1987

YEARS SINCE B. S.	BACHELOR'S		MASTER'S		Ph.D.	
	Median	Mean	Median	Mean	Median	Mean
2-4	$24,000	$24,451	$	$	$	$
5-9	26,000	25,503	27,000	26,494	37,000	36,419
10-14	32,534	32,880	30,000	30,291	40,100	40,958
15-19	32,600	35,931	37,500	37,947	50,319	47,516
20-24	40,000	38,995	39,000	39,565	47,200	48,757
25-29	43,000	41,741			55,000	54,000
30-34					54,900	54,811
35-39					59,950	56,326
> = 40					59,488	58,757
All Years	32,000	34,543	33,200	35,159	50,338	50,183

* Includes only members of the American Chemical Society.
Note: Blanks indicate less than 15 respondents.

FACULTY SALARIES

The only national faculty salary survey that presents data by discipline as well as rank and control is conducted by the **College and University Personnel Association.** Data are collected separately for faculty employed in public and private institutions. The **1986-87 NATIONAL FACULTY SALARY SURVEY BY DISCIPLINE AND RANK IN STATE COLLEGES AND UNIVERSITIES** presents data on 46 disciplines from 261 public institutions employing 63,490 faculty members. The **1986-87 NATIONAL FACULTY SALARY SURVEY BY DISCIPLINE AND RANK IN PRIVATE COLLEGES AND UNIVERSITIES** presents data on 46 disciplines from 478 private institutions employing 46,597 faculty members.

Persons hired in fall 1986 as new assistant professors earn substantially more than the average for all newly hired assistant professors if they are in fields where academe is competing for talent with private industry. In accounting, for example, newly hired assistant professors at public institutions are earning $34,295 - 24% more than the average of $26,220 for all disciplines combined. In engineering, new assistant professors at public institutions are earning $32,155, 18.5% more than the overall average. At private institutions, the pattern is similar, although new assistant professors, on average, earn less than their counterparts at public institutions. New assistant professors in engineering at private institutions average $33,399 - 24% more than the average of $25,276 for all disciplines combined. In contrast, new assistant professors in the biological sciences at private institutions are earning $24,817 - 1.8% less than the overall average. The highest average salary for all ranks combined is in engineering both in public and private institutions. Average faculty salaries by rank and discipline in public and private institutions are reported in Tables 205 and 206.

Faculty salaries are up 5.9% in 1986-87 and the average faculty member is making $35,470, according to the **ANNUAL REPORT ON THE ECONOMIC STATUS OF THE PROFESSION** by the **American Association of University Professors.** After taking inflation into account, the increase is about 3.9% - the biggest rise in more than 15 years. Salary levels increased slightly faster at public compared to private independent and church-related institutions, though the difference between the public and private independent institutions was generally small. The average increase in salary for continuing faculty, however, was much higher at the private independent schools than at the public institutions, 7.3% compared to 6.4%. Although increases were slightly higher at public institutions than at private ones (6.0% versus 5.8%), faculty members are still making less, on the average, than their colleagues at independent private institutions - $35,790 versus $37,760. (Table 207). Average compensation of faculty by rank and type of affiliation is compared in Table 208.

Regardless of type of affiliation, type of institution, or rank, women consistently earn less than their male counterparts as shown in Table 209. For example male professors at doctoral institutions (Category I) earned an average $50,850, while female professors earned $45,240 or 11.0% less. One explanation for the salary disparity between the sexes is that women faculty tend to be concentrated in lower-paid disciplines.

Faculty salaries vary geographically as shown in Table 210. Faculty in doctoral institutions (Category 1) earned the most in the Pacific area, followed closely by those in the New England area and earned the least in the East South Central region.

For the average faculty member, the value of fringe benefits totaled about 22% of salary. Overall, 66% of faculty members have tenure as shown in Table 211.

Faculty members in medical schools continue to receive much higher salaries than do other faculty regardless of rank or type of institution. For example, the average salary for medical school faculty was $45,230 compared to $35,470 for all faculty. Faculty earned more in private medical schools than in public ones at all ranks (Table 212).

Faculty salaries lost ground to inflation in the five school years between 1977 and 1981. From 1981 to 1986, although pay increases outpaced inflation, they did not make up the earlier losses, according to **College Faculty Salaries, 1985-1986** from the **Center for Education Statistics of the U.S. Department of Education.** As in previous years, average faculty salaries for men in 1985-86 were considerably higher than for women - $34,294 compared with $27,576 (Table 213). The salary gap between men and women in 1985-86 was largest at the rank of professor - 10.7% - compared to a differential of 6.7% at the instructor level. Overall, the gap is nearly 20%, and is attributable to the distribution of men and women among the faculty. In 1985-86, 13% of women were professors, and 12% were instructors; 36% of men were professors and 4% were instructors (Table 215).

The salary gap for faculty in public and private universities is widening. In 1976-77, public universities' average salaries were 4.7% less than that earned at private universities. By 1985-86, the gap widened to 9.1% when average salaries reached $36,152 for public and $39,751 for private institutions (Table 214).

Faculty salaries are highest in Alaska regardless of type of institution, and lowest in Mississippi (Table 216).

The **National Science Foundation** reports in its **CHARACTERISTICS OF DOCTORAL SCIENTISTS AND ENGINEERS IN THE UNITED STATES 1985** that among doctoral scientists and engineers working for educational institutions, engineers earned the highest median salaries ($45,500) while doctoral sociologists/anthropologists were paid the lowest ($37,000). Among all employed doctoral engineers, only 33% worked for educational institutions (the lowest proportion of any field) compared with 84% of doctoral sociologists/anthropologists who were employed by educational institutions. Table 217 compares the median salaries of doctoral scientists and engineers employed by educational institutions from 1981 through 1985.

Among doctoral scientists and engineers employed by educational institutions who are college or university teachers, engineers again reported the highest salaries regardless of academic rank or length of contract (Table 218).

The **American Chemical Society's 1987 SALARIES OF ACADEMIC CHEMISTS** found that chemists employed in colleges and universities earn less than those employed in other sectors of the economy. Overall, those chemists engaged primary in research reported higher salaries than chemists employed in teaching (Table 219). Salaries of Ph.D. academic chemists employed full-time on 9-10 month contracts by rank and years since bachelor's degree are shown in Table 220.

Geographically, Ph.D. academic chemists earn more in the Pacific region and lowest in the west north and south central regions (Table 221). Salaries of doctoral academic chemists by specialty are presented in Table 222.

By type of academic institution, Ph.D. chemists employed in medical/professional schools reported the highest median salaries regardless of academic rank, while those doctoral chemists employed in institutions which grant the baccalaureate as the highest degree earned the least (Table 223).

As was true in other employment sectors, women Ph.D. chemists employed in academic institutions reported lower salaries than their male cohorts regardless of academic rank. Male chemistry professors on 9-10 month contracts reported a median salary of $43,000 compared to $38,750 for female chemistry professors (Table 224).

The 30th annual survey of faculty salaries and tenure by the **American Mathematical Society** is based on usable returns from 587 departments in the mathematical sciences. Table 225 shows that doctoral mathematics teachers employed in doctorate granting departments earn more than those employed in non-doctorate granting departments. Additionally, the more prestigious the doctoral granting department, generally the higher salaries paid the faculty. As expected, non-doctoral degree mathematics teachers earn less than those with a doctorate regardless of type of institution (Table 226).

The annual **1986-87 FACULTY SALARIES IN GRADUATE DEPARTMENTS OF PSYCHOLOGY** conducted by the **American Psychological Association** and the **Council of Graduate Departments of Psychology** reports on data submitted by 371 departments covering 6,309 full-time faculty. Generally, faculty in doctoral departments in the Middle-Atlantic states reported the highest salaries regardless of rank or length of experience. Median salaries ranged from a high of $56,809 for full professors with at least 12 years of experience working in the Pacific area to a low of $23,000 for lecturers/instructors with less than two years of experience working in the East North Central area (Table 227). Similar information is presented for full-time faculty in U.S. master's departments of psychology in Table 228.

Type of psychology department also affected level of salary as shown in Table 229. Full professors reported the highest salaries in human development departments and the lowest in school education (Table 229). By employment setting, medical school psychiatry departments consistently pay the highest salaries to professors and associate professors (Table 230). As expected, the longer in rank, the higher the salary as shown in Table 231.

The **American Geological Institute** in its **1987 GEOSCIENCE FACULTY SALARIES IN COLLEGES AND UNIVERSITIES** received responses from 80 departments of geology. Information from that survey is summarized in Table

232. Respondents to the survey indicated that faculty salaries would increase an average 4.5% in the next academic year.

The median salary paid to engineers in education (all ranks combined) reached $40,550 in 1986 according to the twentieth survey report on **SALARIES OF ENGINEERS IN EDUCATION 1986** by the **Engineering Manpower Commission** of the **American Association of Engineering Societies.** The 1986 survey reports data on salaries for 14,281 engineering educators. Engineering professors had an overall median salary of $48,700 compared to only $30,300 for instructors (Table 233). Faculty in engineering schools earn earn considerably more in engineering schools than in technology schools as shown in Tables 234 and 236. For example, full professors in engineering schools reported a median salary of $49,000 compared to $37,550 in technology schools. Salaries of engineering faculty by rank, type of school and length of contract are shown in Table 235.

Overall, faculty salaries in pharmacy rose by 6.6% from 1985-86 to 1986-87, according to the **ANNUAL SURVEY OF FACULTY SALARIES** BY THE **American Association of Colleges of Pharmacy.** This increase is down from the 7.9% increase granted during the 1985-86 period. However, salaries for pharmacy faculty have grown faster from 1983-84 to 1986-87 than the Consumer Price Index. Generally, senior faculty and administrators in departments of pharmacy/pharmaceutics and in pharmaceutical/medical chemistry/pharmacognosy reported the highest average salaries (Table 237). Salaries ranged from a high of $81,300 for deans in colleges of pharmacy with over 21 years of experience to a low of $29,466 for instructors with less than one year of experience (Table 238). Regardless of type of institution or rank, female faculty in colleges of pharmacy earn less than their male counterparts as shown in Table 239 and 240.

The average salary of profesors in business schools rose to $43,500, according to the 19th annual **1986-87 SALARY SURVEY** conducted by the **American Assembly of Collegiate Schools of Business.** The survey includes salary data from 438 institutions covering over 20,000 faculty members and 2,500 administrators.

Women comprise approximately 14.7% of the faculty at AACSB Accredited institutions and 20.5% of the faculty at non-accredited institutions. New women doctorates received salaries that averaged 95.2% of the salaries paid to all new doctorates and women ABDs received salaries that averaged 98%. This represents a decrease from the 1985-86 year when corresponding percentages were 100.0 and 101.0 respectively. Overall, for AACSB member institutions, averages for women faculty were below those for all faculty at all ranks (Table 241).

Topping the salary schedule are professors of policy/control at $53,300. At the other end of the scale were instructors in business education at $20,600 (Table 242).

Administrative personnel in business schools earn higher salaries than do faculty. Administrators in accredited institutions earn higher salaries than do their counterparts in nonaccredited schools. Salaries by type of institution for administrative personnel in business schools are reported in Table 243.

Salary increases for academic administrators are up more than 5% for the second straight year and have out-distanced the rate of inflation again, according to the eighth annual **1986-87 ADMINISTRATIVE COMPENSATION SURVEY** by the **College and University Personnel Association.** The survey reported on information from 1,637 higher education institutions. Overall, the median salaries for administrators at all types of institutions increased 5.3% at the beginning of the 1986-87 academic year. At public institutions, average salaries increased 4.5% this academic year compared with 6.8% at private institutions.

For all institutions combined, salaries ranged from $23,256 for bookstore directors to $120,000 for medical school deans. The salaries of deans of medicine jumped 14.3% over the preceeding year, and those of medical center adminsitrators rose 12.7% to $94,700. The lowest increases were for deans of mathematics and social sciences, whose median salaries declined 1.9% and 1.2% respectively (Table 244).

Regardless of position, women and members of minority groups continue to receive lower salaries than men in similar positions. Some of this discrepancy can be explained by the fact that women and members of minority groups have spent less time in their current jobs. Women earned 40.4% less than men, but had spent 36.1% less time in their present positions, while minorities earned 11.3% less than other workers, but had spent 17.6% less time in their current posts. Median salaries paid to administrative officers by position, minority/non-minority status and sex broken out by size of budget are shown in Tables 245 and 246.

The **National Education Association** in its **ESTIMATES OF SCHOOL STATISTICS** collects data on average annual salaries of instructional staff and classroom teachers, at both the elementary and secondary school level. In its 1986-87 report, NEA estimates that the average classroom teacher salary increased 5.9% over the 1985-86 level to $27,878. As in previous years, regardless of school level, both instructional staff and classroom teachers were paid the highest salaries in Alaska and the lowest in Mississippi (Table 247).

SOURCE: College and University Personnel Association, 1986-87 National Faculty Salary Survey by Discipline and Rank in State Colleges and Universities, April, 1987.

TABLE 205

AVERAGE FACULTY SALARIES IN STATE COLLEGES AND UNIVERSITIES* BY DISCIPLINE (MAJOR FIELD) AND RANK, 1986-87

MAJOR FIELD	RANK											
	Professor		Assoc. Prof.		Asst. Prof.		New Asst. Prof.		Instructor		All Ranks	
	No.	Salary	No.	Salary	No.	Salary	No.	Salary	No.	Salary	No.	Salary
ARCHITECTURE & NATURAL RESOURCES	**116**	**$36,738**	**89**	**$30,178**	**90**	**$26,964**	**7**	**$25,176**	**18**	**$20,781**	**313**	**$31,144**
ARCHITECTURE & ENVIRONMENTAL DESIGN	**64**	**38,676**	**47**	**33,004**	**57**	**26,800**	**6**	**25,684**	**8**	**20,483**	**176**	**32,488**
AREA STUDIES	**35**	**43,717**	**56**	**35,781**	**48**	**28,776**	**3**	**25,090**	**11**	**24,444**	**150**	**34,559**
BIOLOGICAL SCIENCES	**1,407**	**39,704**	**875**	**31,860**	**555**	**26,233**	**82**	**25,045**	**109**	**19,932**	**2,946**	**34,104**
BUSINESS & MANAGEMENT	**552**	**45,372**	**564**	**37,724**	**695**	**31,460**	**101**	**32,280**	**272**	**23,831**	**2,083**	**35,846**
Accounting	394	46,023	438	38,378	550	32,969	63	34,295	230	23,606	1,621	36,223
Business Economics	327	42,549	322	34,503	301	29,601	52	28,807	72	23,748	1,022	34,875
Business Mgmt. & Administration	149	43,937	702	36,570	750	31,560	137	32,524	285	22,250	2,374	35,245
Secretarial & Related Programs	96	37,574	110	31,927	151	25,342	9	23,402	68	20,409	425	29,020
COMMUNICATIONS	**341**	**39,845**	**402**	**31,608**	**482**	**25,818**	**76**	**25,322**	**230**	**20,838**	**1,455**	**29,917**
Communication Technologies	44	39,247	37	32,244	38	25,824	5	23,592	12	22,885	131	31,876
COMPUTER & INFORMATION SCIENCES	**299**	**44,885**	**446**	**37,104**	**519**	**31,615**	**73**	**32,326**	**266**	**23,425**	**1,530**	**34,384**
EDUCATION	**1,218**	**40,183**	**1,052**	**32,821**	**696**	**26,480**	**99**	**25,286**	**180**	**21,405**	**3,146**	**33,615**
Curriculum & Instruction	265	39,263	222	32,480	171	26,878	32	23,843	41	21,655	699	33,046
Education Administration	259	40,297	121	32,948	53	27,086	13	25,915	9	20,647	442	36,301
Physical Education	598	39,367	670	32,374	811	27,030	57	24,369	496	22,546	2,575	30,421
Reading Education	76	37,336	53	30,098	48	26,055	7	24,131	12	21,282	189	31,422
Special Education	245	38,684	236	31,335	207	25,707	22	24,391	57	20,438	745	31,354
Student Counseling & Personnel Serv.	209	40,283	111	33,075	100	25,875	21	24,006	16	23,305	436	34,520
Teacher Education, General Programs	583	38,562	374	31,498	342	26,043	61	24,355	81	20,479	1,380	32,483
Vocational & Technical Education	155	39,420	153	31,647	163	27,030	12	28,248	86	21,407	557	30,877
ENGINEERING	**699**	**45,866**	**644**	**37,548**	**602**	**32,467**	**82**	**32,155**	**93**	**23,829**	**2,038**	**38,273**
FINE & APPLIED ARTS												
Dramatic Arts	225	41,077	204	31,646	266	24,649	35	22,459	63	20,680	758	31,078
Fine Arts	668	38,516	618	30,995	479	25,244	60	23,489	62	21,358	1,827	31,910
Music	893	38,831	864	30,892	771	25,172	79	23,418	231	21,152	2,759	31,047
Visual & Performing Arts	245	37,919	334	30,260	259	24,705	35	23,130	46	20,966	884	30,271

SOURCE: College and University Personnel Association, 1986-87 National Faculty Salary Survey by Discipline and Rank in State Colleges and Universities, April 1987.

TABLE 205 (continued)

AVERAGE FACULTY SALARIES IN STATE COLLEGES AND UNIVERSITIES* BY DISCIPLINE (MAJOR FIELD) AND RANK, 1986-87

MAJOR FIELD	RANK											
	Professor		Assoc. Prof.		Asst. Prof.		New Asst. Prof.		Instructor		All Ranks	
	No.	Salary	No.	Salary	No.	Salary	No.	Salary	No.	Salary	No.	Salary
FOREIGN LANGUAGES	580	40,284	572	31,743	510	25,280	68	23,028	153	21,037	1,815	31,754
HEALTH PROFESSIONS												
Nursing	158	41,421	535	32,264	1,246	26,587	96	27,174	503	22,081	2,442	27,862
Speech Pathology & Audiology	155	42,055	161	33,182	169	26,473	17	22,980	36	21,916	521	32,867
HOME ECONOMICS	138	39,224	218	32,386	328	26,283	36	24,701	116	21,012	800	29,414
INTERDISCIPLINARY STUDIES	89	39,134	100	32,561	123	25,716	12	23,848	26	21,777	338	30,971
LETTERS	1,741	39,224	1,514	31,369	1,344	25,151	141	22,805	578	19,358	5,177	31,055
Philosophy & Religion	396	40,228	322	31,829	197	25,315	34	22,786	12	19,840	927	33,877
LIBRARY & ARCHIVAL SCIENCES	54	39,410	117	31,458	167	25,448	12	23,389	77	20,441	415	28,030
MATHEMATICS	1,187	41,298	1,091	32,986	1,073	27,322	157	26,513	440	20,070	3,791	32,486
PHYSICAL SCIENCES												
Chemistry, General	933	40,367	435	32,346	351	25,931	59	24,615	42	20,278	1,761	35,029
Geological Sciences	325	41,155	214	32,972	155	27,219	10	28,192	14	20,965	708	35,231
Physical Science	269	40,272	173	32,196	151	26,376	21	24,623	36	20,584	629	33,587
Physics	632	41,556	338	33,481	232	27,202	32	25,667	38	21,724	1,240	36,061
PSYCHOLOGY	1,166	40,841	902	32,771	597	25,997	102	24,150	59	20,719	2,724	34,479
SOCIAL SCIENCES	314	39,345	396	30,884	273	25,796	39	25,445	57	21,252	1,040	31,544
Anthropology	216	41,471	165	32,592	91	26,071	7	22,308	7	22,997	479	35,217
Geography	277	40,499	210	31,419	155	26,183	19	25,055	15	21,166	657	33,778
History	1,285	39,728	654	32,047	327	25,517	47	22,876	41	21,096	2,307	35,205
Political Science	588	40,749	471	32,135	303	25,473	35	23,098	53	21,491	1,415	33,906
Sociology	565	40,245	594	32,482	440	25,934	64	22,984	44	21,076	1,643	33,092
ALL DISCIPLINES	21,718	40,606	19,926	32,860	17,436	27,168	2,237	26,220	5,410	21,523	63,490	32,980

SOURCE: College and University Personnel Association, 1986-87 National Faculty Salary Survey by Discipline and Rank in State Colleges and Universities, April, 1987.

TABLE 206

AVERAGE FACULTY SALARIES IN PRIVATE COLLEGES AND UNIVERSITIES* BY DISCIPLINE (MAJOR FIELD) AND RANK, 1986-87

MAJOR FIELD	RANK											
	Professor		Assoc. Prof.		Asst. Prof.		New Asst. Prof.		Instructor		All Ranks	
	No.	Salary	No.	Salary	No.	Salary	No.	Salary	No.	Salary	No.	Salary
ARCHITECTURE & NATURAL RESOURCES	13	$34,220	5	$24,340	18	$24,019	2	$19,250	4	$20,470	40	$27,019
ARCHITECTURE & ENVIRONMENTAL DESIGN	134	43,619	112	33,969	72	27,732	12	25,668	14	21,434	332	35,982
AREA STUDIES	44	46,746	43	36,393	34	27,973	3	26,467	6	25,261	127	37,199
BIOLOGICAL SCIENCES	843	39,701	671	30,312	474	24,653	63	24,817	95	17,515	2,083	32,240
BUSINESS & MANAGEMENT	408	49,523	476	37,412	513	31,278	65	32,912	140	22,855	1,537	37,253
Accounting	197	44,913	303	37,134	376	29,408	61	31,072	127	22,234	1,003	33,879
Business Economics	250	44,215	276	33,543	345	28,143	50	28,547	70	21,177	941	33,478
Business Mgmt. & Administration	360	45,659	590	35,563	681	28,797	123	28,907	186	23,820	1,817	33,825
Secretarial & Related Programs	11	31,822	36	24,241	54	19,427	3	18,071	43	15,699	144	20,464
COMMUNICATIONS	202	37,444	268	31,195	359	24,723	59	24,971	114	20,078	943	28,726
Communication Technologies	20	35,439	25	31,309	63	25,367	11	25,377	18	21,465	126	27,587
COMPUTER & INFORMATION SCIENCES	218	44,627	358	34,602	537	28,518	82	28,467	162	22,017	1,275	32,154
EDUCATION	466	37,142	495	29,829	446	24,073	64	22,817	97	20,503	1,504	29,786
Curriculum & Instruction	28	43,976	34	35,162	30	25,298	8	24,476	2	20,907	94	34,336
Education Administration	16	41,350	20	28,728	15	25,361	2	26,000	1	19,794	52	31,468
Physical Education	220	35,835	402	29,525	519	24,100	31	21,676	307	20,064	1,448	26,533
Reading Education	14	43,955	28	31,097	28	21,625	5	22,421	7	17,695	77	28,772
Special Education	32	39,305	63	28,640	39	22,551	3	22,033	20	16,753	154	27,770
Student Counseling & Personnel Serv.	30	39,675	27	30,688	17	23,743	2	19,368	2	21,809	76	32,448
Teacher Education, General Programs	178	33,499	193	27,865	206	22,518	34	21,464	50	17,434	627	26,875
ENGINEERING	1,342	51,835	854	38,637	715	32,963	141	33,399	66	25,614	2,977	42,934
FINE & APPLIED ARTS												
Dramatic Arts	144	38,166	167	29,409	255	24,004	42	21,997	45	19,914	611	28,517
Fine Arts	316	37,054	392	28,737	327	23,491	41	22,602	57	20,144	1,092	29,124
Music	601	35,768	598	27,736	573	22,889	78	22,998	162	19,858	1,934	28,136
Visual & Performing Arts	185	38,126	187	30,601	205	24,339	30	22,571	44	20,451	621	30,056

SOURCE: College and University Personnel Association, 1986-87 National Faculty Salary Survey by Discipline and Rank in State Colleges and Universities, April 1987.

TABLE 206 (continued)

AVERAGE FACULTY SALARIES IN PRIVATE COLLEGES AND UNIVERSITIES* BY DISCIPLINE (MAJOR FIELD) AND RANK, 1986-87

MAJOR FIELD	RANK											
	Professor		Assoc. Prof.		Asst. Prof.		New Asst. Prof.		Instructor		All Ranks	
	No.	Salary	No.	Salary	No.	Salary	No.	Salary	No.	Salary	No.	Salary
FOREIGN LANGUAGES	600	38,353	764	29,563	664	23,901	104	22,794	228	18,623	2,256	29,128
HEALTH PROFESSIONS												
Nursing	110	37,489	400	29,328	884	23,428	83	24,462	387	20,081	1,781	24,894
Speech Pathology & Audiology	20	43,070	37	31,749	38	24,507	6	24,008	13	22,322	108	30,162
HOME ECONOMICS	26	34,885	61	26,617	102	23,057	15	24,571	31	18,105	220	24,744
INTERDISCIPLINARY STUDIES	86	35,721	109	26,575	141	21,843	17	21,292	32	18,003	368	26,154
LETTERS	1,167	37,888	1,011	29,243	876	23,166	126	22,081	297	17,830	3,351	29,653
Philosophy & Religion	843	36,741	570	29,273	470	23,575	69	22,002	83	19,190	1,966	30,687
LIBRARY & ARCHIVAL SCIENCES	28	36,936	60	27,876	78	23,503	4	23,425	32	19,165	198	26,026
MATHEMATICS	816	42,705	769	31,341	716	25,263	104	25,014	300	19,732	2,602	31,894
PHYSICAL SCIENCES												
Chemistry, General	863	41,821	393	30,402	385	24,897	72	23,828	50	18,003	1,691	34,609
Geological Sciences	168	45,631	80	33,520	83	27,272	12	26,520	7	22,448	338	37,776
Physical Science	124	40,474	68	29,361	75	25,977			19	17,220	286	32,485
Physics	646	46,523	315	33,415	242	26,781	35	25,344	26	19,388	1,229	38,701
PSYCHOLOGY	693	39,838	621	29,839	539	24,064	87	23,474	67	18,872	1,920	31,444
SOCIAL SCIENCES	338	42,076	292	31,332	298	24,919	38	25,344	51	20,555	979	32,528
Anthropology	86	43,406	86	32,274	69	25,477	14	24,022	7	22,996	248	33,981
Geography	46	40,234	31	32,277	23	24,881	3	20,763	5	17,659	105	33,446
History	830	39,330	517	30,284	388	23,798	64	21,881	60	18,500	1,795	32,671
Political Science	432	42,246	366	31,368	302	24,327	58	23,206	48	19,663	1,148	33,119
Sociology	338	38,563	424	28,966	339	24,111	43	22,228	51	19,054	1,152	29,914
THEOLOGY	512	35,320	367	29,252	278	24,051	37	24,336	65	20,243	1,222	30,132
ALL DISCIPLINES	15,044	41,175	13,964	31,301	13,891	25,440	2,006	25,276	3,698	20,049	46,597	31,849

* Includes 478 institutions. NOTE: Blanks indicate no respondents.

SOURCE: American Association of University Professors, The Annual Report of the Economic Status of the Profession, 1986-87, Academe Special Issue, March/April 1987.

TABLE 207

WEIGHTED AVERAGE SALARIES OF FACULTY BY ACADEMIC RANK, TYPE OF INSTITUTION (CATEGORY*) AND TYPE OF AFFILIATION, 1986-87

ACADEMIC RANK	ALL COMBINED		PUBLIC		PRIVATE INDEP.		CHURCH-RELATED	
	Average Salary	% Incr. over 1986-87	Average Salary	% Incr. over 1986-87	Average Salary	% Incr. over 1986-87	Average Salary	% Incr. over 1986-87
CATEGORY I								
Professor	$50,500	6.2	$48,740	6.3	$56,900	5.9	$51,120	6.1
Associate Professor	36,210	5.8	35,590	5.8	38,820	5.8	37,440	6.5
Assistant Professor	30,360	5.9	29,930	5.9	32,040	6.2	30,490	5.1
Instructor	22,130	4.8	21,440	4.9	24,890	4.2	26,260	6.1
Lecturer	26,090		26,060		26,650		24,310	
All Ranks	39,800	6.0	38,670	6.1	44,620	5.9	39,030	5.7
CATEGORY II-A								
Professor	42,160	6.3	42,290	6.5	42,680	6.2	39,800	3.9
Associate Professor	33,200	5.9	33,340	6.0	33,140	6.0	32,130	5.1
Assistant Professor	27,310	5.5	27,520	5.6	26,650	6.1	26,670	4.6
Instructor	21,220	4.0	21,640	4.0	19,070	4.0	21,180	3.6
Lecturer	22,790		22,470		24,210		26,530	
All Ranks	33,750	5.9	34,050	6.1	33,010	6.0	32,140	4.5
CATEGORY II-B								
Professor	36,170	4.9	36,870	3.2	40,460	5.5	32,480	5.2
Associate Professor	29,210	5.1	31,210	4.2	30,650	5.5	26,910	5.4
Assistant Professor	24,070	5.0	25,940	4.3	24,990	5.9	22,500	4.8
Instructor	19,840	5.4	21,590	4.8	19,520	4.7	18,990	6.2
Lecturer	23,240		22,810		26,250		19,130	
All Ranks	28,480	5.0	29,660	4.0	30,780	5.5	26,170	5.2
CATEGORY III								
Professor	37,170	6.3	37,460	6.3	27,210	5.6	23,890	8.3
Associate Professor	31,330	6.7	31,560	6.7	24,720	6.5	21,320	6.9
Assistant Professor	26,590	6.7	26,940	6.8	20,030	4.9	19,200	7.0
Instructor	22,270	6.9	22,750	7.0	16,190	4.1	16,570	6.7
Lecturer	19,540		19,540					
All Ranks	30,100	6.6	30,490	6.6	21,120	5.3	20,310	7.3
ALL CATEGORIES Except IV								
Professor	45,530	6.1	45,280	6.3	50,270	5.9	37,620	5.1
Associate Professor	33,820	5.8	34,170	5.9	34,910	5.8	30,090	5.3
Assistant Professor	27,920	5.7	28,470	5.8	28,310	6.1	24,600	4.8
Instructor	21,330	4.9	31,810	4.9	20,440	4.3	19,900	5.6
Lecturer	24,930		24,730		26,410		24,080	
All Ranks	35,470	5.9	35,790	6.0	37,760	5.8	29,670	5.1
CATEGORY IV								
No Rank	31,240	3.9	31,430	3.9	20,280	9.1	19,830	4.7

*See original survey for definition of categories.

SOURCE: American Association of University Professors, The Annual Report of the Economic Status of the Profession, 1986-86, Special Issue, Academe, March-April 1987.

TABLE 208

WEIGHTED AVERAGE COMPENSATION OF FACULTY BY ACADEMIC RANK, CATEGORY*, AND TYPE OF AFFILIATION, 1986-87

ACADEMIC RANK	ALL COMBINED	PUBLIC	PRIVATE INDEPENDENT	CHURCH-RELATED
	Average Compensation	Average Compensation	Average Compensation	Average Compensation
CATEGORY I				
Professor	$61,130	$58,720	$69,780	$62,440
Assoc. Professor	44,350	44,510	48,250	46,200
Ass't. Professor	37,070	36,580	39,080	36,790
Instructor	27,130	26,340	30,450	31,260
Lecturer	32,110	32,180	32,470	29,190
All Ranks	**48,430**	**46,430**	**54,830**	**47,660**
CATEGORY II-A				
Professor	51,190	51,200	52,600	48,540
Assoc. Professor	40,670	40,780	40,890	39,380
Ass't. Professor	33,340	33,670	32,340	32,250
Instructor	25,820	26,410	22,840	25,650
Lecturer	28,110	27,750	29,300	32,460
All Ranks	**41,130**	**41,450**	**40,500**	**39,150**
CATEGORY II-B				
Professor	44,440	44,770	50,170	39,780
Assoc. Professor	35,620	38,160	37,690	32,800
Ass't. Professor	29,050	31,610	30,260	26,930
Instructor	23,620	26,240	23,050	22,400
Lecturer	28,190	27,690	32,290	22,240
All Ranks	**34,710**	**36,120**	**37,760**	**31,710**
CATEGORY III				
Profesor	46,340	46,730	33,120	29,290
Assoc. Professor	39,010	39,340	29,660	25,860
Ass't. Professor	33,310	33,800	24,110	23,220
Instructor	28,000	28,690	19,360	19,740
Lecturer	25,120	25,120		
All Ranks	**37,600**	**38,130**	**25,420**	**24,610**
ALL CATEGORIES EXCEPT IV				
Professor	55,300	54,770	61,820	45,990
Assoc. Professor	41,460	41,810	43,180	36,830
Ass't. Professor	34,090	34,900	34,420	29,560
Instructor	26,040	26,860	24,510	23,610
Lecturer	30,690	20,550		
All Ranks	**43,250**	**43,580**	**32,190**	**28,970**
CATEGORY IV				
No Rank	37,550	37,790	46,350	36,060

* See original survey for definition of categories.

NOTE: Blanks indicate too few individuals for data to be meaningful.

SOURCE: American Association of University Professors, The Annual Report on the Economic Status of the Profession, 1986-87, Special Issue, Academe, March-April, 1987.

TABLE 209

WEIGHTED AVERAGE SALARIES OF FACULTY BY ACADEMIC RANK, CATEGORY*, TYPE OF AFFILIATION, AND SEX, 1986-87

ACADEMIC RANK	ALL COMBINED		PUBLIC		PRIVATE/INDEPENDENT		CHURCH RELATED	
	Men	Women	Men	Women	Men	Women	Men	Women
CATEGORY I								
Professor	$50,850	$45,240	$48,880	$43,840	$57,450	$49,950	$51,620	$46,340
Associate Professor	36,610	34,210	35,870	33,560	39,470	36,500	38,090	35,310
Assistant Professor	31,410	28,200	30,970	27,780	32,920	29,790	31,400	28,810
Instructor	23,550	21,110	22,640	20,600	26,010	23,340	28,800	24,680
Lecturer	28,000	23,960	27,900	24,020	28,730	24,090	26,510	22,460
CATEGORY II-A								
Professor	42,240	40,440	42,330	40,910	48,230	39,730	39,900	36,070
Associate Professor	33,510	31,600	33,560	31,990	33,800	30,670	33,650	29,850
Assistant Professor	27,990	26,050	28,160	26,350	27,460	24,990	27,420	25,150
Instructor	21,910	20,540	22,430	20,950	19,210	18,250	21,890	20,690
Lecturer	23,980	20,840	23,830	20,550	24,290	24,160	33,550	23,710
CATEGORY II-B								
Professor	36,530	34,100	36,380	35,240	40,870	38,110	33,070	20,560
Associate Professor	29,560	27,810	30,920	29,970	31,130	29,450	27,710	25,660
Assistant Professor	24,740	23,300	26,340	24,970	25,500	24,300	23,270	21,910
Instructor	20,390	19,490	22,370	20,760	19,510	19,580	19,670	18,760
Lecturer	24,370	22,450	23,740	21,900	28,250	24,910	20,530	18,600
CATEGORY III								
Professor	37,450	35,400	37,760	35,700	27,120	27,400	23,930	23,270
Associate Professor	31,700	29,850	31,950	30,100	25,550	23,480	21,800	21,070
Assistant Professor	27,120	25,320	27,460	25,770	20,890	19,320	19,320	18,470
Instructor	23,310	21,510	23,700	22,260	17,710	15,360	17,360	15,810
Lecturer	20,930	18,350	20,930	18,350				
ALL CATEGORIES COMBINED EXCEPT IV								
Professor	46,070	40,630	45,610	41,020	51,200	43,330	38,300	33,860
Associate Professor	34,290	31,800	34,490	32,300	35,700	32,540	30,930	28,210
Assistant Professor	28,910	26,180	29,380	26,790	29,450	26,270	25,610	23,440
Instructor	22,180	20,590	22,730	21,040	21,200	19,530	20,670	19,590
Lecturer	26,710	22,970	26,460	22,800	28,400	24,230	25,470	22,010
CATEGORY IV								
No Rank	31,820	30,140	31,980	30,380	20,740	19,700	20,610	18,890

*See original survey for definition of categories. Note: Sample includes 1,8712institutions providing data by gender. Blanks indicate too few individuals to be meaningful.

SOURCE: American Association of University Professors, The Annual Report on the Economic Status of the Profession, 1986-87, Special Issue.

TABLE 210

WEIGHTED AVERAGE SALARIES OF FACULTY BY ACADEMIC RANK, CATEGORY*, AND REGION, 1986-87

ACADEMIC RANK	WEST		NORTH CENTRAL		NORTHEAST		SOUTH		
	Pacific	Mountain	West N. Central	East N. Central	Middle Atlantic	New England	West S. Central	East S. Central	South Atlantic
CATEGORY I									
Professor	$56,610	$44,020	$44,380	$49,580	$55,680	$55,700	$46,120	$44,500	$50,450
Assoc. Professor	38,030	33,650	33,030	36,500	39,440	38,210	33,770	33,340	36,740
Ass't. Professor	32,990	28,630	28,420	30,580	31,880	31,750	28,790	27,950	30,670
Instructor	22,090	22,610	20,830	21,860	23,570	25,420	21,110	26,200	23,220
Lecturer	31,820	24,060	19,900	23,790	25,730	29,370	22,160	20,750	24,800
All Ranks	**45,520**	**36,490**	**36,340**	**39,580**	**43,390**	**43,950**	**35,810**	**35,160**	**39,080**
CATEGORY II-A									
Professor	47,380	37,810	38,190	39,720	43,290	44,420	37,410	37,410	41,150
Assoc. Professor	36,130	31,360	31,190	32,790	34,540	34,030	31,150	30,810	33,530
Ass't. Professor	29,440	26,390	26,190	27,480	28,220	27,920	26,810	28,850	28,230
Instructor	25,040	22,130	21,050	22,030	22,500	21,980	21,040	21,070	21,870
Lecturer	25,600	24,960	19,440	22,120	25,340	28,320	19,340	18,500	23,610
All Ranks	**41,050**	**31,160**	**30,610**	**32,690**	**34,960**	**35,410**	**30,030**	**30,260**	**32,890**
CATEGORY II-B									
Professor	40,020	35,000	33,890	34,770	40,140	43,790	32,830	31,820	34,150
Assoc. Professor	30,590	28,210	27,600	28,700	31,230	32,280	28,220	26,080	28,520
Ass't. Professor	25,120	23,760	23,170	23,720	25,200	26,550	24,720	22,400	23,920
Instructor	21,720	19,630	20,270	19,740	20,990	22,130	20,970	17,980	20,290
Lecturer	19,430		22,060	20,000	23,520	30,030	21,470	20,200	23,360
All Ranks	**31,290**	**29,080**	**26,850**	**28,070**	**30,560**	**33,030**	**27,220**	**25,730**	**27,660**
CATEGORY III									
Professor	40,690	28,940	37,640	38,170	39,500	33,200	36,550	30,780	36,670
Assoc. Professor	37,800	26,730	31,720	33,360	32,480	28,080	30,280	26,390	30,300
Ass't. Professor	33,000	24,160	26,110	28,820	27,200	24,260	26,500	22,710	25,840
Instructor	30,080	22,860	23,470	25,180	22,390	21,710	23,650	20,460	21,300
Lecturer				20,600	18,920	16,870			19,720
All Ranks	**37,230**	**25,090**	**31,020**	**31,610**	**32,210**	**28,260**	**28,650**	**24,860**	**29,920**
ALL CATEGORIES COMBINED, Except IV									
Professor	51,050	41,520	40,470	44,820	48,080	49,660	42,340	39,620	44,860
Assoc. Professor	36,580	32,220	31,130	34,050	35,370	35,190	32,350	30,790	33,990
Ass't. Professor	30,770	27,210	26,040	28,440	28,590	28,900	27,350	25,820	28,210
Instructor	23,850	22,200	29,810	21,890	22,360	22,690	21,210	20,410	21,800
Lecturer	31,250	24,200	20,010	22,830	25,260	29,140	21,660	19,660	24,080
All Ranks	**42,370**	**33,820**	**31,990**	**35,470**	**37,030**	**38,490**	**32,880**	**31,140**	**34,690**
CATEGORY IV									
No Rank	36,870	27,370	26,510	31,470	20,260		26,700	24,680	24,110

*See original survey for definition of categories. NOTE: Sample includes 1,875 institutions. Blanks indicate too few individuals to be meaningful.

SOURCE: American Association of Universiy Professors, The Annual Report on the Economic Status of the Profession, 1986-87, Academe, Special Issue, March/April 1987.

TABLE 211

AVERAGE SALARY, FINGE BENEFITS, COMPENSATION AND PERCENT TENURED OF FULL-TIME FACULTY MEMBERS IN INSTITUTIONS OF HIGHER EDUCATION BY RANK, 1986-87

ACADEMIC RANK	Average Salary	Average Fringe Benefits	Average Compensation	Benefits As % of Salary	% Tenured
Professor	$45,530	$9,770	$55,300	21.5	97
Associate Professor	33,820	7,640	41,460	22.6	83
Assistant Professor	27,920	6,170	34,090	22.1	22
Instructor	21,330	4,710	26,040	22.1	8
Lecturer	24,930	5,770	30,690	23.1	1
Other	26,010	5,530	31,530	21.3	16
All Ranks	35,470	7,780	43,250	21.9	66

TABLE 212

AVERAGE SALARY AND FRINGE BENEFITS OF FACULTY MEMBERS IN PRECLINICAL DEPARTMENTS OF MEDICAL SCHOOLS BY TYPE OF AFFILIATION AND ACADEMIC RANK, 1986-87

ACADEMIC RANK	ALL COMBINED		PUBLIC		PRIVATE	
	Salary	Fringe Benefits	Salary	Fringe Benefits	Salary	Fringe Benefits
Professor	$63,170	$13,840	$61,940	$13,210	$65,890	$15,200
Associate Professor	47,800	10,490	48,110	10,400	47,050	10,710
Assistant Professor	37,440	8,130	37,850	8,070	36,300	8,290
Instructor	17,760	4,580	17,800	4,380	27,290	6,6509
All Ranks	45,230	9,590	43,960	9,030	47,150	11,280

Note: Sample includes 50 institutions reporting data for preclinical departments. Data on 12-month basis.

SOURCE: U.S. Department of Education, National Center for Education Statistics, "College Faculty Salaries, 1976-1986," August 1987.

TABLE 213

AVERAGE SALARY OF FULL-TIME INSTRUCTIONAL FACULTY IN HIGHER EDUCATION ON 9- OR 10-MONTH CONTRACTS BY TYPE OF INSTITUTION, AND SEX, 1985-86

TYPE OF INSTITUTION	Totel	Men	Women
ALL INSTITUTIONS	**$32,392**	**$34,294**	**$27,576**
4-Year Universities	37,145	39,151	29,354
Other 4-Year Colleges	31,553	33,237	27,152
Two-Year Colleges	29,259	30,490	27,294
PUBLIC INSTITUTIONS	**32,750**	**34,528**	**28,299**
4-Year Universities	36,152	38,089	28,671
Other 4-Year Colleges	32,977	34,542	28,683
2-Year Colleges	29,590	30,758	27,693
PRIVATE INSTITUTIONS	**31,402**	**33,656**	**25,523**
4-Year Universities	39,751	41,929	31,174
Other 4-Year Colleges	28,932	30,789	24,640
2-Year Colleges	19,436	20,412	18,504

SOURCE: U.S. Department of Education, Center for Education Statistics, "College Faculty Salaries, 1976-1986," August 1987.

TABLE 214

AVERAGE SALARY OF FULL-TIME INSTRUCTIONAL FACULTY IN HIGHER EDUCATION ON 9-10 MONTH CONTRACTS BY TYPE & CONTROL OF INSTITUTION AND RANK, 1986

ACADEMIC RANK & TYPE OF CONTROL	TYPE OF INSTITUTION			
	All Institutions	4-Year Universities	Other 4-Year Colleges	2-Year Colleges
ALL RANKS	**$32,392**	**$37,145**	**$31,553**	**$29,259**
Public	32,750	36,152	32,977	29,590
Private	31,402	39,751	28,982	19,436
PROFESSOR	**42,268**	**47,323**	**40,285**	**36,076**
Public	42,328	45,660	41,481	36,418
Private	42,118	51,682	37,803	24,519
ASSOCIATE PROFESSOR	**31,787**	**33,656**	**31,199**	**30,483**
Public	32,367	33,018	32,460	30,733
Private	30,400	35,387	28,862	22,291
ASSISTANT PROFESSOR	**26,277**	**28,242**	**25,601**	**25,823**
Public	26,951	27,860	26,762	26,162
Private	24,891	29,165	23,777	19,297
INSTRUCTOR	**20,918**	**20,626**	**20,323**	**22,434**
Public	21,553	20,035	21,167	22,818
Private	19,314	22,581	19,031	16,419
LECTURER	**23,770**	**24,129**	**23,632**	**23,154**
Public	23,839	23,877	23,854	23,500
Private	23,477	24,866	22,539	*
NO ACADEMIC RANK	**29,088**	**24,923**	**23,997**	**29,420**
Public	29,597	24,201	25,265	29,712
Private	21,577	23,394	23,295	18,783

* Too few faculty for meaningful results.

TABLE 215

NUMBER AND AVERAGE SALARY OF FULL-TIME INSTRUCTIONAL FACULTY IN HIGHER EDUCATION ON 9- OR 10-MONTH CONTRACTS BY ACADEMIC RANK AND SEX, 1985-86

ACADEMIC RANK	No. of Faculty	Salary
ALL RANKS	**338,471**	**$32,392**
Men	242,623	34,294
Women	95,848	27,576
PROFESSOR	**100,529**	**42,268**
Men	88,136	42,833
Women	12,393	38,252
ASSOCIATE PROFESSOR	**85,502**	**31,787**
Men	64,437	32,273
Women	21,065	30,300
ASSISTANT PROFESSOR	**78,948**	**26,277**
Men	48,646	27,094
Women	30,302	24,966
INSTRUCTOR	**22,323**	**20,918**
Men	10,440	21,693
Women	11,833	20,237
LECTURER	**6,256**	**23,770**
Men	3,160	25,238
Women	3,096	22,273
UNDESIGNATED OR NO ACADEMIC RANK	**44,913**	**29,088**
Men	27,804	30,267
Women	17,109	27,171

SOURCE: U.S. Department of Education, Center for Education Statistics, Digest of Education Statistics, 1987, May 1987.

TABLE 216

AVERAGE SALARIES OF FULL-TIME INSTRUCTIONAL FACULTY ON 9-10 MONTH CONTRACTS IN INSTITUTIONS OF HIGHER EDUCATION BY STATE, TYPE AND CONTROL OF INSTITUTION, 1985-86

STATE	All Institutions	TYPE AND CONTROL OF INSTITUTION					
		PUBLIC			PRIVATE		
		Total	4-Year	2-Year	Total	4-Year	2-Year
Alabama	$29,108	$30,132	$30,932	$27,510	$22,499	$22,562	$21,165
Alaska	42,696	43,463	42,637	45,114	22,446	22,446	*
Arizona	34,118	34,450	35,864	31,765	25,541	26,141	17,528
Arkansas	27,427	28,088	29,064	22,479	21,455	21,557	13,100
California	39,002	39,636	42,085	36,119	32,603	32,760	20,559
Colorado	31,003	31,220	32,845	24,338	29,481	29,664	20,134
Connecticut	36,464	36,470	38,638	30,021	36,456	36,621	22,434
Delaware	32,134	32,718	33,824	26,493	21,309	21,309	*
Dist. of Col.	35,014	33,662	33,662	*	35,302	35,302	*
Florida	29,334	29,526	33,062	24,802	28,603	28,769	18,190
Georgia	30,378	31,356	32,323	26,272	27,175	27,690	18,769
Hawaii	30,444	31,027	32,376	28,001	20,430	20,430	*
Idaho	28,266	28,588	29,223	24,992	22,267	22,267	*
Illinois	32,789	32,488	33,545	30,839	33,427	33,575	18,957
Indiana	30,279	30,319	31,883	20,438	30,181	30,250	18,727
Iowa	27,959	29,442	31,512	22,411	25,451	25,523	21,838
Kansas	28,274	29,766	31,272	25,459	20,048	20,452	16,304
Kentucky	27,324	28,359	29,488	22,238	23,248	23,787	17,181
Louisiana	28,202	27,709	27,960	24,383	30,795	30,795	*
Maine	27,444	27,363	28,354	22,347	27,684	27,684	*
Maryland	32,797	32,667	33,852	30,590	33,307	33,362	20,269
Massachusetts	36,582	35,452	37,715	29,833	37,309	37,967	20,985
Michigan	33,039	34,268	34,828	32,693	26,334	26,460	24,600
Minnesota	32,373	34,404	35,852	30,403	28,209	28,349	20,778
Mississippi	24,273	24,562	27,804	19,206	20,804	21,818	14,586
Missouri	29,033	29,508	29,938	27,842	27,886	28,356	16,015
Montana	27,730	28,451	28,604	26,170	22,006	22,242	20,893
Nebraska	27,693	28,263	29,405	22,248	25,732	25,925	19,731
Nevada	32,394	32,404	33,752	27,381	24,000	24,000	*
New Hampshire	30,237	29,161	30,851	22,203	31,639	34,112	15,557
New Jersey	35,313	35,057	36,860	30,603	35,942	36,028	25,638
New Mexico	29,485	29,715	30,340	26,903	20,557	20,557	*
New York	35,845	36,879	38,813	33,586	34,634	35,058	18,108
North Carolina	29,585	31,444	33,114	20,311	24,150	24,564	20,273
North Dakota	27,618	28,241	28,939	26,125	18,801	18,820	18,756
Ohio	32,212	33,748	35,664	26,898	28,259	28,278	13,602
Oklahoma	29,479	29,972	31,127	26,371	27,414	27,763	18,754
Oregon	28,629	28,838	29,921	27,707	27,773	27,773	*
Pennsylvania	31,956	31,657	32,928	27,886	32,305	32,715	19,436
Rhode Island	33,519	31,394	32,769	26,967	36,014	36,014	*
South Carolina	27,895	29,251	31,319	21,606	22,738	23,229	18,839
South Dakota	25,234	26,784	26,784	*	21,027	21,402	16,071
Tennessee	29,389	30,127	31,498	24,099	27,644	27,927	17,942
Texas	31,311	31,311	32,432	28,930	31,309	31,493	17,983
Utah	31,475	31,664	33,452	25,597	22,002	22,002	*
Vermont	28,843	30,956	31,438	25,539	26,439	26,724	23,351
Virginia	30,769	31,638	33,673	25,746	26,935	27,049	18,048
Washington	30,376	30,924	33,837	27,521	27,980	27,980	*
West Virginia	26,225	27,105	27,667	21,809	21,555	21,805	17,362
Wisconsin	31,233	31,736	33,177	29,259	28,344	28,344	*
Wyoming	32,065	32,065	36,198	27,551	*	*	*
50 States & DC	32,392	32,750	34,033	29,590	31,402	31,732	19,436
Outlying Areas Total	23,580	23,645	23,611	24,177	10,227	10,227	*
U.S. Service Schools	38,205	38,205	38,205	*	*	*	*

*No Data Available or Reported.

SOURCE: National Science Foundation, Characteristics of Doctoral Scientists and Engineers in the U.S., 1985

TABLE 217

NUMBER AND MEDIAN ANNUAL SALARIES OF DOCTORAL SCIENTISTS AND ENGINEERS EMPLOYED BY EDUCATIONAL INSTITUTIONS BY FIELD, 1981-1985

FIELD	1981				1983				1985			
	Number	%	% of total employed	Median annual salary	Number	%	% of total empl.	Median annual salary	Number	%	% of total empl.	Median annual salary
TOTAL	187,011	100.0	54.5	$31,100	196,050	100.0	53.1	$36,200	211,611	100.0	52.9	$40,600
Physical Scientists	28,225	15.1	44.7	31,800	27,931	14.2	43.7	37,200	29,700	14.0	44.0	41,000
Chemists	15,675	8.4	37.4	30,800	15,037	7.7	36.4	35,600	16,073	7.6	36.8	39,400
Physicists/Astronomers	12,550	6.7	59.2	33,500	12,894	6.6	56.8	40,100	13,627	6.4	57.4	45,100
Mathematical Scientists	12,719	6.8	81.7	30,400	13,244	6.8	80.9	35,600	13,560	6.4	80.9	40,300
Mathematicians	10,998	5.9	84.4	30,400	11,365	5.8	83.6	35,400	11,645	5.5	83.4	40,200
Statisticians	1,721	0.9	67.6	31,000	1,879	1.0	67.3	36,300	1,915	0.9	68.4	42,200
Computer/Info. Specialists	3,010	1.6	33.2	30,700	4,031	2.1	33.1	37,000	5,288	2.5	35.3	43,600
Environmental Scientists	6,741	3.6	42.4	31,200	6,682	32.4	40.6	36,200	7,222	3.4	41.8	40,900
Earth Scientists	4,965	2.7	41.4	31,700	4,658	2.4	37.2	36,600	5,059	2.4	38.3	41,100
Oceanographers	987	0.5	55.0	28,300	1,082	0.6	62.1	31,700	1,200	0.6	61.3	39,600
Atmospheric Scientists	789	0.4	37.1	31,500	942	0.5	42.8	34,700	963	0.5	45.3	45,500
Engineers	18,042	9.6	31.6	36,400	20,320	10.4	33.0	42,500	21,697	10.3	32.9	48,600
Life Scientists	55,762	29.8	65.7	30,900	58,906	30.0	63.5	35,700	63,595	30.1	62.4	39,900
Biological Scientists	35,783	19.1	72.1	29,900	38,046	19.4	68.9	34,800	40,688	19.2	68.0	38,500
Agricultural Scientists	7,635	4.1	56.6	30,900	8,189	4.2	56.3	35,900	8,597	4.1	55.4	39,500
Medical Scientists	12,344	6.6	56.6	35,400	12,671	6.5	54.9	38,900	14,310	6.8	54.1	43,200
Psychologists	21,675	11.6	50.6	29,100	22,182	11.3	47.6	33,600	24,893	11.8	47.7	37,600
Social Scientists	40,837	21.8	73.5	29,700	42,754	21.8	72.1	34,400	45,656	21.6	71.3	38,600
Economists	10,630	5.7	66.3	33,300	11,362	5.8	67.0	37,600	11,821	5.6	65.9	42,500
Sociologists/Anthropologists	9,303	5.0	84.5	28,400	10,369	5.3	86.0	31,800	10,621	5.0	83.7	37,000
Other Social Scientists	20,904	11.2	73.3	29,100	21,023	10.7	69.3	33,800	23,214	11.0	69.5	36,900

NOTE: Percents may not add to 100 because of rounding.
Median salaries computed for full-time employed civilians only.

SOURCE: National Science Foundation, Characteristics of Doctoral Scientists and Engineers in the United States, 1985.

TABLE 218

MEDIAN ANNUAL SALARIES OF DOCTORAL SCIENTISTS AND ENGINEERS WHO ARE UNIVERSITY OR 4-YEAR COLLEGE TEACHERS BY FIELD, SALARY BASE AND ACADEMIC RANK, 1985

FIELD & SALARY BASE	TOTAL	ACADEMIC RANK			
		Professor	Associate Professor	Assistant Professor	Other
ALL FIELDS					
Academic Year	$33,100	$40,000	$30,600	$25,500	$28,800
Calendar Year	40,500	49,400	38,900	30,800	31,700
PHYSICAL SCIENTISTS					
Academic Year	32,800	38,700	29,400	23,700	
Calendar Year	41,200	46,800	36,700	30,800	34,300
CHEMISTS					
Academic Year	31,600	36,800	28,300	23,100	
Calendar Year	40,800	46,000	36,400	30,900	
PHYSICISTS/ASTRONOMERS					
Academic Year	34,600	41,300	29,900	25,000	
Calendar Year	42,500	49,600	37,900	30,000	
MATHEMATICAL SCIENTISTS					
Academic Year	33,200	40,500	30,500	25,400	
Calendar Year	39,300	42,500	33,500	28,200	
MATHEMATICIANS					
Academic Year	33,400	40,500	30,400	25,100	
Calendar Year	39,900	42,000	37,200	26,100	
STATISTICIANS					
Academic Year	32,500	40,900	30,700	25,900	
Calendar Year	38,300				
COMPUTER/INFORMATION SPECIALISTS					
Academic Year	35,900	41,200	34,900	35,200	
Calendar Year	45,300		40,700		
ENVIRONMENTAL SCIENTISTS					
Academic Year	32,900	39,900	32,200	24,600	
Calendar Year	45,500	54,400	40,800		
EARTH SCIENTISTS					
Academic Year	32,800	38,600	31,500	24,900	
Calendar Year	46,100	50,600	35,900		
OCEANOGRAPHERS					
Academic Year	32,300				
Calendar Year	40,400				
ATMOSPHERIC SCIENTISTS					
Academic Year					
Calendar Year	53,300				
ENGINEERS					
Academic Year	39,300	44,000	36,500	32,900	
Calendar Year	51,000	59,700	41,900	39,500	
LIFE SCIENTISTS					
Academic Year	30,300	36,200	29,800	23,800	
Calendar Year	40,600	50,000	39,700	32,100	
BIOLOGICAL SCIENTISTS					
Academic Year	30,200	35,900	29,400	23,400	
Calendar Year	40,500	50,300	39,900	32,100	26,700
AGRICULTURAL SCIENTISTS					
Academic Year	35,000	38,600	30,000		
Calendar Year	38,900	44,400	36,300	30,200	

SOURCE: National Science Foundation, Characteristics of Doctoral Scientists and Engineers in the United States, 1985.

TABLE 218 (continued)

MEDIAN ANNUAL SALARIES OF DOCTORAL SCIENTISTS AND ENGINEERS WHO ARE UNIVERSITY OR 4-YEAR COLLEGE TEACHERS BY FIELD, SALARY BASE AND ACADEMIC RANK, 1985

FIELD & SALARY BASE	TOTAL	ACADEMIC RANK			
		Professor	Associate Professor	Assistant Professor	Other
MEDICAL SCIENTISTS					
Academic Year	$30,600	$36,700	$30,600	$24,400	
Calendar Year	43,500	52,700	40,800	34,500	28,200
PSYCHOLOGISTS					
Academic Year	31,200	37,800	28,900	23,600	
Calendar Year	36,800	46,000	38,500	30,000	
SOCIAL SCIENTISTS					
Academic Year	32,000	39,200	30,300	25,100	
Calendar Year	36,800	45,100	34,200	25,800	
ECONOMISTS					
Academic Year	35,000	43,300	32,300	27,900	-
Calendar Year	40,500	46,800	37,700	31,400	
SOCIOLOGISTS/ ANTHROPOLOGISTS					
Academic Year	30,600	37,200	28,700	22,400	
Calendar Year	36,100	42,800	32,000	24,700	
OTHER SOCIAL SCIENTISTS					
Academic Year	30,900	38,600	29,700	24,300	
Calendar Year	34,400	45,400	33,900	24,200	

NOTE: Includes individuals reporting Teaching as their primary or secondary work activity. All median salaries were computed only for full-time employed civilians.

No median was computed for groups with fewer than 20 individuals reporting salary.

SOURCE: American Chemical Society, 1987 Salaries of Academic Chemists - Analysis of the American Chemical Society's 1987 Survey of Salaries and Employment, July 1987.

TABLE 219

MEDIAN AND MEAN ANNUAL SALARIES OF Ph.D. ACADEMIC CHEMISTS* EMPLOYED FULL-TIME BY WORK FUNCTION, ACADEMIC RANK AND LENGTH OF CONTRACT, 1987

ACADEMIC RANK	WORK FUNCTION					
	TEACHING		RESEARCH		TEACHING/RESEARCH	
	Median	Mean	Median	Mean	Median	Mean
Professor						
9-10 Month	$39,200	$39,361	$54,500	$56,255	$46,050	$49,321
11-12 Month	40,750	41,777	60,500	61,470		
Associate Professor						
9-10 Month	30,000	30,549	35,000	36,938	35,000	35,087
11-12 Month			45,047	44,364		
Assistant Professor						
9-10 Month	25,000	25,490	29,000	29,084	27,500	28,452
11-12 Month			34,500	35,374		
Instructor						
9-10 Month	24,600	25,698				
11-12 Month			31,000	32,968		
No Ranks						
9-10 Month	**32,000**	**30,783**				
Research Associate						
9-10 Month			28,000	30,319		

* Includes only members of the American Chemical Society.
NOTE: Blanks indicate fewer than 15 respondents.

SOURCE: American Chemical Society, 1987 Salaries of Academic Chemists - Analysis of the American Chemical Society's 1987 Survey of Salaries and Employment, July 1987

TABLE 220

MEDIAN AND MEAN SALARIES OF PH.D. CHEMISTS* EMPLOYED FULL-TIME ON 9-10 MONTH CONTRACTS BY ACADEMIC RANK AND YEARS SINCE B.S., 1987

Years Since B.S.	ACADEMIC RANK		
	Professor	Associate Professor	Assistant Professor
5 - 9	$	$	$26,795
10 - 14		32,050	27,000
15 - 19	41,100	31,700	27,450
20 - 24	38,575	32,000	
25 - 29	42,300	32,811	
30 - 34	43,000		
35 - 39	42,900		
> = 40	49,774		
TOTAL	42,879	32,000	27,000

*Includes only members of the American Chemical Society.
NOTE: Blanks indicate fewer than 15 respondents.

TABLE 221

MEDIAN AND MEAN ANNUAL SALARIES OF Ph.D. ACADEMIC CHEMISTS* EMPLOYED FULL-TIME BY GEOGRAPHIC REGION, LENGTH OF CONTRACT AND ACADEMIC RANK, 1987

GEOGRAPHIC REGION	PROFESSOR		ASSOCIATE PROFESSOR		ASSISTANT PROFESSOR	
	Median	Mean	Median	Mean	Median	Mean
Pacific						
9-10 Month	$50,000	$54,185	$35,000	$33,806		
11-12 Month	64,900	69,732				
Mountain						
9-10 Month	39,200	41,632				
West No. Central						
9-10 Month	37,320	39,741			$25,450	$25,805
11-12 Month	53,000	55,271				
West So. Central						
9-10 Month	37,833	39,223	31,500	33,354		
11-12 Month	52,000	56,126				
East No. Central						
9-10 Month	42,000	45,591	32,000	32,736	28,000	27,610
11-12 Month	61,000	62,213				
East So. Central						
9-10 Month	40,700	42,212	29,450	29,399	25,000	25,425
11-12 Month	52,000	54,440				
Middle Atlantic						
9-10 Month	45,000	47,253	34,000	33,325	27,250	27,471
11-12 Month	59,584	60,115				
South Atlantic						
9-10 Month	41,500	43,857	33,777	33,554	27,250	27,634
11-12 Month	60,000	60,461	42,750	42,609		
New England						
9-10 Month	45,000	44,454	32,725	33,603		

*Includes only members of the American Chemical Society.
NOTE: Blanks indicate fewer than 15 respondents

SOURCE: American Chemical Society, 1987 Salaries of Academic Chemists- Analysis of the American Chemical Society's 1987 Survey of Salaries and Employment, July 1987.

TABLE 222

MEDIAN AND MEAN SALARIES OF Ph.D. ACADEMIC CHEMISTS* EMPLOYED FULL-TIME BY SPECIALTY, LENGTH OF CONTRACT AND ACADEMIC RANK, 1987

SPECIALTY	ACADEMIC RANK					
	PROFESSOR		ASSOCIATE PROFESSOR		ASSISTANT PROFESSOR	
	Median	Mean	Median	Mean	Median	Mean
Biochemistry						
9-10 Month	$44,000	$47,102	$32,200	$32,815	$26,250	$26,292
11-12 Month	61,864	61,511	45,250	45,489	35,500	35,590
General						
9-10 Month	35,950	36,195	30,250	31,031		
Inorganic						
9-10 Month	44,250	44,389	34,750	33,850	28,000	37,807
11-12 Month	59,150	64,802				
Organic						
9-10 Month	42,625	44,873	31,198	32,654	26,500	26,630
Physical						
9-10 Month	44,270	47,312	33,115	33,163	26,900	27,075
11-12 Month	53,000	55,735				
Other Chemical Science						
9-10 Month	45,000	47,418	33,000	32,933	28,750	28,987
11-12 Month	57,000	59,664	42,000	43,348	33,750	36,548
TOTAL						
9-10 Month	43,000	45,310	32,125	32,761	27,000	27,469
11-12 Month	58,167	59,565	42,000	42,096	33,750	33,891

*Includes only members of the American Chemical Society.

NOTE: Blanks indicate fewer than 15 respondents.

SOURCE: American Chemical Society, 1987 Salaries of Academic Chemists--An Analysis of the American Chemical Society's 1987 Survey of Salaries and Employment, July 1987.

TABLE 223

MEDIAN AND MEAN ANNUAL SALARIES OF Ph.D. ACADEMIC CHEMISTS* EMPLOYED FULL-TIME BY TYPE OF ACADEMIC INSTITUTION, LENGTH OF CONTRACT AND RANK, 1987

TYPE OF INSTITUTION	ACADEMIC RANK							
	PROFESSOR		ASSOCIATE PROFESSOR		ASSISTANT PROFESSOR		RESEARCH ASSOCIATE	
	Median	Mean	Median	Mean	Median	Mean	Median	Mean
Medical or Prof. School								
11-12 Month	$61,864	$65,889	$45,400	$47,218	$36,982	$37,150	$24,000	$27,853
Bachelor's								
9-10 Month	37,005	37,354	29,400	29,639	25,000	25,031		
11-12 Month	37,600	39,757	30,535	31,860				
Master's								
9-10 Month	40,292	40,770	32,000	31,890	26,500	26,969		
11-12 Month	55,000	51,506						
Doctorate								
9-10 Month	50,000	51,158	35,000	35,424	28,700	29,343		
11-12 Month	62,000	62,651	42,000	42,266	35,000	35,494	33,000	32,876

* Includes only members of the American Chemical Society.
NOTE: Blanks indicate less than 15 respondents.

SOURCE: American Chemical Society, 1987 Salaries of Academic Chemists - Analysis of the American Chemical Society's 1987 Survey of Salaries and Employment, July 1987.

TABLE 224

MEDIAN AND MEAN SALARIES OF Ph.D. ACADEMIC CHEMISTS* EMPLOYED FULL-TIME BY ACADEMIC RANK, LENGTH OF CONTRACT AND SEX, 1987

ACADEMIC RANK	9 - 10 MONTH CONTRACTS				11 - 12 MONTH CONTRACTS			
	MEN		WOMEN		MEN		WOMEN	
	Median	Mean	Median	Mean	Median	Mean	Median	Mean
Professors	$43,000	$45,566	$38,750	$41,617	$58,647	$59,859	$	$
Associate Professor	32,811	33,133	31,000	30,850	42,000	42,676		
Assistant Professor	27,000	27,524	27,200	27,064	34,000	34,506		
No Ranks	32,350	37,178						
Research Associate					31,000	32,210	28,000	31,012
ALL RANKS	**37,000**	**39,186**	**30,900**	**33,206**	**46,000**	**48,397**	**35,000**	**36,703**

*Includes only members of the American Chemical Society.

Note: Blanks indicate fewer than 15 respondents

SOURCE: The American Mathematical Society NOTICES, Vol. 33, No. 7, November 1986.

TABLE 225

NUMBER AND MEDIAN SALARY RANGES FOR DOCTORAL DEGREE MATHEMATICS TEACHERS BY RANK AND TYPE OF INSTITUTION, 1985-1986 AND 1986-87

TYPE OF INSTITUTION	RANK	1985 - 1986			1986 - 1987		
		NUMBER OF FACULTY		MEDIAN RANGES	NUMBER OF FACULTY		MEDIAN RANGES
		Total	Women		Total	Women	
Doctorate Granting Departments GROUP I*	Instructor/Lecturer	99	9	$23,000-25,800	99	13	$24,100-27,100
	Assistant Professor	200	19	25,600-29,700	200	21	28,000-32,000
	Associate Professor	237	16	33,400-35,900	246	16	35,500-39,900
	Professor	887	28	45,000-51,400	902	29	44,800-54,300
Doctorate Granting Departments GROUP II*	Instructor/Lecturer	34	8	18,100-21,900	37	10	19,300-23,700
	Assistant Professor	209	32	25,800-29,200	203	29	27,000-31,800
	Associate Professor	310	18	30,300-35,200	319	18	31,300-38,200
	Professor	541	17	39,900-47,100	549	20	42,400-51,900
Doctorate Granting Departments GROUP III*	Instructor/Lecturer	57	9	19,300-25,800	53	9	19,300-29,900
	Assistant Professor	286	41	25,200-28,200	323	49	26,700-30,000
	Associate Professor	394	24	30,500-35,100	383	26	31,000-37,200
	Professor	587	16	39,400-45,300	593	17	40,900-48,300
Doctorate Granting Departments GROUP IV*	Instructor/Lecturer	7	5		5	3	
	Assistant Professor	152	26	27,600-30,800	142	29	28,200-31,900
	Associate Professor	135	13	32,300-38,200	147	14	34,700-39,300
	Professor	322	14	45,300-56,600	325	13	47,300-60,900
Doctorate Granting Departments GROUP V*	Instructor/Lecturer	6	1		6	1	
	Assistant Professor	34	3	29,300-35,700	32	2	30,400-40,500
	Associate Professor	30	2	36,600-44,300	21	1	38,100-49,500
	Professor	101	3	50,000-55,100	86	3	51,500-59,700
Doctorate Granting Departments GROUP VI*	Instructor/Lecturer	2	1		2	2	
	Assistant Professor	61	9	25,500-30,400	67	10	27,200-29,000
	Associate Professor	183	10	35,100-43,000	180	11	37,400-43,200
	Professor	252	6	44,300-53,200	253	6	45,000-51,500
Master's Degree Granting Departments	Instructor/Lecturer	46	11	20,900-30,000	48	15	21,300-29,400
	Assistant Professor	493	80	24,500-28,100	503	91	25,500-29,500
	Associate Professor	673	86	29,300-34,700	652	84	30,800-35,700
	Professor	857	59	36,500-42,600	862	63	37,300-44,700
Bachelor's Degree Granting Departments	Instructor/Lecturer	13	4	20,200-25,000	12	3	20,000-27,000
	Assistant Professor	410	106	23,000-26,200	399	99	24,700-28,000
	Associate Professor	535	67	26,200-32,100	562	69	27,700-33,500
	Professor	523	57	30,800-39,800	523	55	32,300-41,400

* Group I and Group II include the leading departments of mathematics in the U.S. according to the 1982 assessment of Research-Doctorate Programs conducted by the Conference Board of Associated Research Councils in which departmens were rated according to the quality of their graduate faculty. Group I is composed of 39 departments with scores in the 3.0 - 5.0 range. Group II is composed of 43 departments with scores in the 2.0 - 2.9 range. Group III is composed of the remaining U.S. departments reporting a doctoral program. Group IV contains U.S. departments (or programs) of statistics, biostatistics and biometrics reporting a doctoral program. Group V contains U.S. departments (or programs) in applied mathematics/applied science, operations research and management science which report a doctoral program. Group VI contains U.S. departments (or programs) in the mathematical sciences in Canadian universities. Group M (master's) contains U.S. departments granting a master's degree as the highest graduate degree. Group B (bachelor's) contains U.S. departments granting a baccalaureate degree only.

SOURCE: The American Mathematical Society NOTICES, Vol. 33, No. 7, November 1986.

TABLE 226

NUMBER AND MEDIAN SALARY RANGES FOR NON-DOCTORAL DEGREE MATHEMATICS TEACHERS BY RANK AND TYPE OF INSTITUTION, 1985-1986 AND 1986-87

TYPE OF INSTITUTION	NON-PH.D. DEGREE RANK	1985 - 1986			1986 - 1987		
		NUMBER OF FACULTY		MEDIAN RANGES	NUMBER OF FACULTY		MEDIAN RANGES
		Total	Women		Total	Women	
Doctorate Granting Departments GROUP II*	Instructor/Lecturer	47	33	$16,900-23,100	45	31	$17,500-23,200
	Assistant Professor	7	1		7	1	
	Associate Professor	11	4		11	4	
	Professor	4	0		3	0	
Doctorate Granting Departments GROUP III*	Instructor/Lecturer	93	61	16,000-21,100	83	54	17,000-22,600
	Assistant Professor	40	16	23,100-28,400	41	17	24,600-29,200
	Associate Professor	20	1	28,400-36,800	20	1	28,800-37,900
	Professor	11	6		9	0	
Master's Degree Granting Departments	Instructor/Lecturer	377	226	17,800-21,700	326	187	18,600-23,400
	Assistant Professor	194	52	24,100-30,300	178	47	25,400-31,300
	Associate Professor	142	18	29,500-35,100	136	17	31,200-36,800
	Professor	49	5	31,800-39,500	42	6	34,400-43,900
Bachelor's Degree Granting Departments	Instructor/Lecturer	361	170	17,600-20,800	319	135	18,500-22,800
	Assistant Professor	285	91	20,900-26,000	297	96	21,800-27,000
	Associate Professor	183	24	24,400-31,600	175	27	25,500-34,000
	Professor	32	4	29,300-38,400	36	7	31,700-40,400

* Please see footnote on preceeding table.

SOURCE: American Psychological Association, 1986-87 Faculty Salaries in Graduate Departments of Psychology, March, 1987.

TABLE 227

NUMBER, MEAN AND MEDIAN 9-MONTH SALARIES OF FULL-TIME FACULTY IN U.S. DOCTORAL DEPARTMENTS OF PSYCHOLOGY* BY GEOGRAPHIC REGION, RANK AND YEARS IN RANK, 1986-87

GEOGRAPHIC REGION	ACADEMIC RANK AND YEARS IN RANK										
	Full Professor				Associate Professsor			Assistant Professor		Lecturer or Instructor	
	12+ Years	6-11 Years	3-5 Years	0-2 Years	6+ Years	3-5 Years	0-2 Years	3+ Years	0-2 Years	3+ Years	0-2 Years
NEW ENGLAND											
(19 Depts.) No.	91	44	14	16	52	26	27	40	23	1	5
Mean	$54,213	$45,156	$44,094	$44,542	$37,839	$34,206	$33,313	$28,790	$27,273		$25,532
Median	55,150	44,325	42,315	41,690	37,510	33,438	32,500	29,400	27,500		24,800
MIDDLE ATLANTIC											
(39 Depts.) No.	191	82	41	50	127	49	40	95	75	6	5
Mean	56,434	52,046	49,235	45,562	40,117	39,037	34,141	29,895	27,851	27,574	25,498
Median	57,000	50,188	51,211	44,750	39,827	38,852	32,966	29,000	27,170	30,625	25,343
EAST NORTH CENTRAL											
(44 Depts.) No.	248	131	57	52	145	63	67	82	95	19	21
Mean	49,503	47,021	40,705	41,534	35,694	33,284	34,333	28,860	26,147	27,821	22,562
Median	47,857	46,858	41,500	40,670	35,092	32,800	33,301	27,989	25,500	26,800	23,000
WEST NORTH CENTRAL											
(17 Depts.) No.	99	47	27	16	31	22	26	27	22	3	3
Mean	48,288	42,634	37,977	37,981	33,288	31,230	29,595	26,069	27,619		
Median	47,287	41,900	35,244	37,367	32,900	29,609	28,647	25,500	27,232		
SOUTH ATLANTIC											
(39 Depts.) No.	162	112	38	43	122	66	52	69	56	1	7
Mean	52,363	46,707	43,022	40,125	34,549	32,860	31,182	27,271	26,222		26,000
Median	52,252	45,902	42,524	38,600	34,963	32,725	30,863	26,780	26,600		28,000
EAST SOUTH CENTRAL											
(16 Depts.) No.	56	21	20	12	25	22	18	26	35	3	
Mean	44,964	48,374	37,959	36,442	29,473	33,906	31,647	25,274	24,676		
Median	42,997	45,550	38,329	37,625	29,052	32,747	30,929	24,980	24,000		
WEST SOUTH CENTRAL											
(21 Depts.) No.	78	63	18	19	61	37	30	41	45	4	6
Mean	44,994	44,180	41,610	40,520	30,615	32,554	30,758	25,773	24,578		24,310
Median	44,250	41,400	37,573	40,000	31,000	31,000	29,791	25,900	24,000		23,501
MOUNTAIN											
(20 Depts.) No.	88	55	14	24	51	28	17	28	31	2	3
Mean	47,224	43,465	38,636	36,355	34,408	31,606	29,229	26,197	25,361		
Median	47,325	42,800	37,650	35,844	34,364	30,219	29,100	25,100	24,000		
PACIFIC											
(22 Depts.) No.	142	82	36	30	49	20	23	34	32	1	7
Mean	57,840	48,539	44,712	45,325	34,891	33,968	33,232	30,454	27,815		27,265
Median	56,809	49,548	46,700	42,400	35,200	34,769	32,720	31,077	27,000		29,976

* Includes departments, schools, interdisplinary programs, or other academic units offering a graduate degree in one or more areas of psychology.

SOURCE: American Psychological Association, 1986-87 Faculty Salaries in Graduate Departments of Psychology, March, 1987.

TABLE 228

NUMBER, MEAN, AND MEDIAN 9-MONTH SALARIES OF FULL-TIME FACULTY IN U.S. MASTER'S DEPARTMENTS OF PSYCHOLOGY* BY GEOGRAPHIC REGION, RANK AND YEARS IN RANK, 1986-87

GEOGRAPHIC REGION	ACADEMIC RANK AND YEARS IN RANK										
	Full Professor				Associate Professsor			Assistant Professor		Lecturer or Instructor	
	12+ Years	6-11 Years	3-5 Years	0-2 Years	6+ Years	3-5 Years	0-2 Years	3+ Years	0-2 Years	3+ Years	0-2 Years
NEW ENGLAND											
(8 Depts.) No.	12	1	1	2	14	4	1	7	6	1	
Mean	$48,483				$34,637			$29,146	$24,815		
Median	48,665				32,605			32,000	22,125		
MIDDLE ATLANTIC											
(18 Depts.) No.	37	19	11	11	35	21	13	27	16	1	1
Mean	48,335	44,883	38,303	39,218	38,939	31,630	29,848	32,067	25,837		
Median	47,455	43,500	39,000	40,000	40,000	30,000	28,015	33,000	25,000		
EAST NORTH CENTRAL											
(19 Depts.) No.	48	34	19	19	41	25	19	20	28	2	11
Mean	43,335	37,422	35,651	33,527	33,856	30,002	29,591	27,114	25,390		20,829
Median	42,000	36,950	35,000	33,165	34,920	29,187	28,780	26,423	24,654		21,000
WEST NORTH CENTRAL											
(8 Depts.) No.	13	7	4	6	7	9	6	17	17		
Mean	40,952	38,468		36,112	30,121	30,586	26,671	26,952	22,414		
Median	43,744	40,329		37,212	30,000	30,000	25,563	26,490	22,000		
SOUTH ATLANTIC											
(21 Depts.) No.	36	21	12	7	43	18	14	37	18	1	2
Mean	42,028	40,018	36,656	36,059	32,879	30,334	29,664	27,177	23,200		
Median	41,850	29,796	35,900	37,200	32,540	29,800	29,168	26,560	23,251		
EAST SOUTH CENTRAL											
(8 Depts.) No.	6	21	9	13	19	6	4	9	16	3	5
Mean	34,736	35,927	35,033	33,774	29,484	27,230		23,192	22,517		18,650
Median	34,650	34,740	35,632	34,275	29,136	26,902		23,557	22,293		17,800
WEST SOUTH CENTRAL											
(12 Depts.) No.	12	9	7	5	19	12	6	17	14	2	6
Mean	39,546	37,014	33,614	41,020	32,723	30,539	29,981	26,903	26,735		20,617
Median	39,874	37,400	33,700	39,002	32,194	30,500	28,650	26,500	26,050		21,350
MOUNTAIN											
(9 Depts.) No.	8	12	1	4	9	6	4	11	9		
Mean	40,426	34,767			31,153	28,823		26,215	24,347		
Median	40,500	34,930			32,117	29,500		26,272	23,500		
PACIFIC											
(18 Depts.) No.	76	54	32	8	29	16	12	10	8	3	1
Mean	46,316	46,155	46,097	42,716	35,448	36,200	32,668	27,646	29,183		
Median	49,500	49,500	47,280	43,010	36,672	38,080	32,496	26,625	29,630		

*Includes departments, schools, interdisplinary programs, or other academic units offering a graduate degree in one or more areas of psychology.

SOURCE: American Psychological Association, 1986-87 Faculty Salaries in Graduate Departments of Pscyhology, March 1987.

TABLE 229

NUMBER, MEAN, AND MEDIAN 9-MONTH SALARIES OF FULL-TIME FACULTY IN U.S. DOCTORAL DEPARTMENTS OF PSYCHOLOGY BY TYPE OF DEPARTMENT, RANK AND YEARS IN RANK, 1986-87

DEPARTMENT	ACADEMIC RANK AND YEARS IN RANK										
	Full Professor				Associate Professsor			Assistant Professor		Lecturer or Instructor	
	12+ Years	6-11 Years	3-5 Years	0-2 Years	6+ Years	3-5 Years	0-2 Years	3+ Years	0-2 Years	3+ Years	0-2 Years
PSYCHOLOGY											
(158 Depts.) No.	946	501	211	221	520	258	227	346	322	29	46
Mean	$52,578	$47,308	$43,000	$42,366	$35,511	$33,956	$32,154	$28,282	$26,342	$28,005	$24,793
Median	50,924	46,678	42,000	40,554	35,000	33,185	31,700	27,776	26,000	26,800	24,000
EDUCATIONAL PSYCHOLOGY											
(20 Depts.) No.	78	60	20	12	44	26	19	18	23	1	5
Mean	47,302	45,487	44,511	39,444	35,198	34,380	33,821	27,739	26,000		24,572
Median	47,293	44,000	40,815	39,425	35,077	32,740	33,600	26,100	25,000		24,000
COUNSELING PSYCHOLOGY											
(14 Depts.) No.	34	16	4	5	14	5	12	9	9	1	1
Mean	44,437	42,889		33,088	39,133	34,547	31,863	25,837	26,615		
Median	41,645	42,338		32,000	38,872	33,983	31,432	25,500	26,700	—	
HUMAN DEVELOPMENT											
(10 Depts.) No.	21	17	8	8	30	15	13	27	17	5	5
Mean	54,738	53,104	45,540	41,637	36,172	32,304	34,988	27,619	26,367	18,031	23,772
Median	53,100	50,000	44,655	41,284	36,455	32,500	33,850	26,856	25,358	16,950	21,000
PROFESSIONAL SCHOOL											
(11 Depts.) No.	10	15	11	7	14	16	16	19	20	1	
Mean	46,279	45,750	34,882	31,848	34,891	30,337	32,308	28,613	26,658		
Median	47,377	40,800	32,727	33,204	34,632	31,164	31,707	28,141	26,293		
COUNSELING/COUNSELOR EDUCATION											
(10 Depts.) No.	40	13	6	2	21	5	6	8	9	3	
Mean	49,935	38,774	38,110		34,320	33,697	30,161	25,369	27,655		
Median	50,686	38,000	35,619		32,000	30,918	31,000	26,228	28,000		
SCHOOL EDUCATION AND OTHER											
(14 Depts.) No.	26	15	5	7	20	8	7	15	14		
Mean	42,308	40,647	37,024	40,911	34,852	38,003	33,338	27,792	26,588		
Median	41,220	37,000	37,000	40,185	36,650	38,936	33,000	28,000	26,836		

Source: American Psychological Association, Salaries in Psychology 1985, August 1985.

TABLE 230

MEDIAN AND MEAN 9-10 MONTH SALARIES FOR DOCTORAL-LEVEL PSYCHOLOGISTS+ IN FACULTY POSITIONS BY EMPLOYMENT SETTING AND ACADEMIC RANK, 1985

EMPLOYMENT SETTING	ACADEMIC RANK							
	FULL PROFESSOR		ASSOCIATE PROFESSOR		ASSISTANT PROFESSOR		LECTURER/INSTRUCTOR	
	MEDIAN	MEAN	MEDIAN	MEAN	MEDIAN	MEAN	MEDIAN	MEAN
University Psychology Department	$42,000	$43,107	$30,000	$30,606	$24,000	$24,152	$22,000	$23,429
University Education Department	42,000	43,496	30,000	31,122	24,000	24,900		
University Business School or Department	50,000	51,941	37,000	38,892	32,000	32,383		
University Other Academic Department	45,000	45,791	33,500	34,121	26,500	26,886		
University Student Counseling Center*	31,909	32,482	27,000	28,052				
University Research Center*	38,045	38,455	34,364	36,245	25,364	25,364	25,587	
University, Other Setting	42,000	44,308	25,000	25,800				
Four Year College Psychology Department	34,000	35,453	28,000	28,025	21,500	21,817		
Four Year College Education Department	40,000	39,158	28,000	30,143	22,000	23,364		
Four Year College Business School or Dept.			38,000	35,857	32,000	32,143		
Four Year College Other Academic Department	38,000	36,818	26,000	27,316	23,500	23,833		
Two Year College	38,000	38,188	29,000	28,867			31,500	30,333
Medical School Psychiatry Department*	46,277	46,582	34,364	36,701	27,000	28,227	20,455	19,739
Medical School, Other Department*	45,000	44,314	34,773	35,785	27,000	27,499	22,091	23,143
Professional School*	40,500	40,991	27,000	27,468				

+Members of the American Psychological Association.

*Salaries in these settings are often paid on an 11-12 month basis. Therefore, the 9-10 month salaries reported here may be converted to 11-12 month salaries by multiplying by 11/9.

NOTE: Blanks indicate fewer than 5 respondents.

SOURCE: American Psychological Association, 1986-87 Faculty Salaries in Graduate Departments of Psychology, March 1987.

TABLE 231

NUMBER, MEDIAN AND MEAN 9-MONTH SALARIES OF FULL-TIME FACULTY IN UNITED STATES DEPARTMENTS OF PSYCHOLOGY BY RANK, TYPE OF DEPARTMENT AND YEARS IN RANK, 1986-87

YEARS IN RANK AND TYPE OF DEPARTMENT	Full Professor			Associate Professor			Assistant Professsor			Lecturer or Instructor		
	No.	Median	Mean	No.	Median	Mean	No.	Median	Mean	No.	Median	Mean
AT LEAST 12 YEARS												
Doctoral	1,155	$49,810	$51,644									
Master's	248	43,979	44,444									
6-11 YEARS												
Doctoral	637	45,880	46,812									
Master's	178	39,560	40,909									
AT LEAST 6 YEARS												
Doctoral				663	$35,000	$35,526						
Master's				216	33,036	34,032						
3-5 YEARS												
Doctoral	265	41,630	42,547	333	33,000	33,843						
Master's	96	37,931	39,644	117	30,000	31,093						
AT LEAST 3 YEARS												
Doctoral							442	$27,569	$28,114	37	$26,000	$26,264
Master's							155	26,690	27,785	13	23,500	26,892
LESS THAN 3 YEARS												
Doctoral	262	40,325	41,691	300	32,000	32,366	414	26,000	26,382	60	24,000	24,523
Master's	75	35,989	36,740	79	28,978	29,726	132	23,830	24,689	26	20,850	20,832

Source: American Geological Institute, 1987 Geoscience Faculty Salaries in Colleges and Universities, June 1987.

TABLE 232

SALARIES OF GEOSCIENCE FACULTY BY RANK, 1987

RANK	No.	High Ranges	Bulk of High Salary Clusters	High Ranges		Low Ranges	Bulk of Low Salary Clusters	Low Ranges	
				Median	Mean			Median	Mean
Assistant Professor	217	$22,247-41,747	$27,000-34,800	$30,400	$31,023	$19,165-35,150	$24,500-31,200	$27,000	$27,685
Associate Professor	250	25,300-58,440	33,985-44,400	38,690	38,697	28,862-42,000	33,400-37,500	31,670	33,013
Professor	501	33,050-77,500	43,260-66,828	55,668	55,334	27,073-65,977	35,000-43,300	39,300	40,169

SOURCE: Engineering Manpower Commission of American Ass'n. of Engineering Societies, Salaries of Engineers in Education, 1986

TABLE 233

NUMBER AND MEDIAN ANNUAL SALARIES OF FACULTY IN ALL SCHOOLS ON ALL CONTRACTS, BY RANK AND SELECTED YEARS SINCE BACCALAUREATE, 1986

RANK	YEARS SINCE BACCALAUREATE									
	5	7	9-11	15-17	18-20	21-23	24-26	27-29	33+	Overall
Professors	 $	 $	(10)	(177) $47,650	(412) $48,400	(625) $48,700	(762) $48,800	(788) $48,900	(1,600) $48,900	(5,333) $48,700
Associate Professors	(1)	(9) 39,150	(196) 39,600	(527) 39,250	(469) 38,700	(390) 38,100	(306) 37,450	(257) 36,900	(389) 35,800	(13,210) 38,150
Assistant Professors	(106) 34,650	(247) 34,950	(675) 34,950	(324) 34,000	(178) 33,250	(99) 32,550	(83) 31,850	(78) 31,250	(105) 29,950	(2,979) 34,300
Instructors	(35) 23,350	(33) 24,750	(104) 26,750	(71) 30,650	(71) 32,400	(49) 34,000	(59) 35,450	(75) 36,650	(136) 39,200	(944) 30,300
Administrative	(3)	(1)	(14) 35,350	(33) 50,300	(87) 55,050	(109) 58,050	(119) 59,800	(134) 60,800	(186) 61,600	(819) 58,900
Researchers	(31) 27,850	(32) 29,650	(94) 32,550	(78) 38,800	(80) 41,950	(59) 44,950	(99) 47,550	(70) 49,650	(151)	(996) 38,850

TABLE 234

NUMBER AND MEDIAN ANNUAL SALARIES OF FACULTY IN ALL ENGINEERING SCHOOLS ON ALL CONTRACTS,BY RANK AND SELECTED YEARS SINCE BACCALAUREATE, 1986

RANK OR POSITION	YEARS SINCE BACCALAUREATE									
	7	9-11	12-14	15-17	18-20	21-23	24-26	27-29	33+	Overall
Professors	(2) $	(9) $	(55) $46,400	(172) $47,800	(400) $48,550	(592) $48,950	(730) $49,150	(753) $49,250	(1,556) $49,350	(5,143) $49,000
Associate Professors	(9)	(192) 39,750	(386) 39,750	(508) 39,500	(438) 39,000	(366) 38,450	(284) 37,850	(242) 37,250	(357) 35,950	(3,026) 38,450
Assistant Professors	(242) 35,050	(661) 35,100	(516) 34,850	(288) 34,400	(157) 33,850	(86) 33,300	(63) 32,700	(61) 32,150	(85) 30,850	(2,770) 34,650
Instructors	(29) 25,100	(91) 27,450	(71) 29,750	(58) 31,900	(67) 33,850	(39) 35,550	(49) 37,000	(63) 38,200	(121) 40,450	(819) 31,000
Administrative	(1)	(11) 30,800	(15) 42,450	(30) 51,350	(81) 56,800	(99) 59,700	(111) 61,100	(124) 61,750	(174) 62,100	(760) 60,200
Researchers	(32) 29,800	(92) 32,750	(90) 35,900	(76) 39,150	(75) 42,400	(58) 45,550	(93) 48,350	(70) 50,550	(143)	(960) 39,250

SOURCE: Engineering Manpower Commission of American Ass'n. of Engineering Societies, Salaries of Engineers in Education, 1986.

TABLE 235

MEDIAN AND MEAN SALARIES OF ENGINEERING FACULTY BY RANK, TYPE OF SCHOOL AND LENGTH OF CONTRACT, 1986

RANK	ALL SCHOOLS			ENGINEERING SCHOOLS			TECHNOLOGY SCHOOLS	
	All Contracts	9-10 Mo. Contract	11-12 Mo. Contract	All Contracts	9-10 Mo. Contract	11-12 Mo. Contract	All Contracts	9-10 Mo. Contracts
Professor								
Median	$48,700	$48,500	$54,900	$49,000	$48,800	$55,650	$37,550	$37,500
Mean	50,100	49,900	53,900	50,500	50,300	54,650	39,000	39,050
Associate Professor								
Median	38,150	37,900	46,600	38,450	38,150	48,000	32,450	32,650
Mean	38,600	38,100	46,650	38,950	38,400	48,400	33,250	33,400
Assistant Professor								
Median	34,300	34,200	39,450	34,650	34,500	41,200	28,250	28,000
Mean	34,450	34,100	39,100	34,900	34,500	40,450	28,450	28,150
Instructor								
Median	30,300	30,100	30,950	31,000	31,000	31,000	27,100	
Mean	32,600	32,750	31,550	33,300	33,500	31,850	28,000	
Researcher								
Median	38,850	41,900	38,000	39,200	44,000	38,000		
Mean	41,550	43,600	40,950	41,900	44,850	41,050		
Administrator								
Median	58,900	51,200	60,900	60,200	51,950	[illegible] 150		
Mean	56,900	49,850	58,950	57,950	50,300	50,200		

TABLE 236

NUMBER AND MEDIAN ANNUAL SALARIES OF FACULTY IN TECHNOLOGY SCHOOLS ON ALL CONTRACTS, BY RANK AND SELECTED YEARS SINCE BACCALAUREATE, 1986

RANK	YEARS SINCE BACCALAUREATE								
	9-11	12-14	15-17	18-20	21-23	24-26	27-29	33+	Overall
Professors	$	$	(5) $44,450	(12) $40,800	(29) $38,700	(32) $37,550	(35) $37,100	(44) $37,800	(190) $37,550
Associate Professors		(16) 31,000	(19) 33,050	(31) 32,700	(24) 32,600	(22) 32,600	(15) 32,600	(32) 32,600	(184) 32,450
Assistant Professors	(14) 27,850	(26) 28,050	(36) 28,250	(21) 28,400	(13) 28,550	(20) 28,650	(17) 28,750	(20) 28,900	(209) 28,250
Instructors	(13) 24,050	(15) 25,350	(13) 26,600	(4)	(10) 28,900	(10) 29,950	(12) 30,800	(15) 32,350	(125) 27,100

NOTE: Blanks indicate no median salaries computed for fewer than 5 respondents.

SOURCE: American Association of Colleges of Pharmacy, Annual Survey of Faculty Salaries, 1986-87.

TABLE 237

NUMBER AND AVERAGE CALENDAR YEAR SALARIES OF FACULTY IN COLLEGES OF PHARMACY BY DISCIPLINE AND ACADEMIC RANK, 1986-87

DISCIPLINE	ACADEMIC RANK											
	Dean		Ass't./Assoc. Dean		Professor		Associate Professor		Assistant Professor		Instructor	
	No.	Salary	No.	Salary	No.	Salary	No.	Salary	No.	Salary	No.	Salary
Pharmacy/Pharmaceutics	25	$77,021	14	$55,230	97	$58,662	80	$44,358	83	$38,403	7	$28,193
Pharmacology	12	67,407	15	54,240	70	55,405	59	44,586	67	37,689	1	
Continuing Education					5	60,877	9	43,605	4	32,943	4	34,122
Pharmacy Administration	12	66,143	19	52,647	29	54,933	44	44,554	52	37,062	3	
Pharmaceutical/Medicinal Chemistry/ Pharmacognosy	11	78,164	19	58,697	151	61,054	81	43,933	49	37,439	3	
Pharmacy Practice	9	64,681	14	51,361	70	54,873	180	43,225	327	34,749	42	35,253
Biological Sciences	2		3		6	48,516	11	37,959	15	33,170	2	

Note: Blanks indicate insufficient data reported.

TABLE 238

NUMBER AND AVERAGE CALENDAR YEAR SALARIES OF FACULTY IN COLLEGES OF PHARMACY BY YEARS IN RANK AND ACADEMIC RANK, 1986-87

YEARS IN RANK	ACADEMIC RANK											
	Professor		Associate Professor		Assistant Professor		Dean		Ass't./Assoc. Dean		Instructor	
	No.	Salary	No.	Salary	No.	Salary	No.	Salary	No.	Salary	No.	Salary
0 - 1	44	$53,407	88	$41,120	203	$34,832	13	$62,874	12	$46,077	15	$29,466
2 - 5	128	54,465	198	43,601	324	35,765	21	68,181	43	51,065	27	31,159
6 - 10	92	61,456	125	45,025	62	38,298	18	75,632	21	51,984	12	31,831
11 - 15	91	58,290	34	46,014	8	46,770	8	78,247	9	59,840	5	36,791
16 - 20	57	61,888	20	43,959	3		7	73,630	9	60,296	4	36,820
21+	26	60,475	3		4	39,528	5	81,300	3		4	36,820
Overall	438	57,911	468	43,698	604	35,933	72	71,637	97	52,795	67	31,765

NOTE: Blanks indicate insufficient data.

SOURCE: American Association of Colleges of Pharmacy, Annual Survey of Faculty Salaries, 1986-87.

TABLE 239

NUMBER AND AVERAGE SALARY OF FACULTY IN COLLEGES OF PHARMACY BY TYPE OF INSTITUTION, RANK AND SEX, 1986-87

RANK & SEX	ALL SCHOOLS		PUBLIC		PRIVATE	
	No.	Salary	No.	Salary	No.	Salary
CALENDAR YEAR						
Dean	**70**	**$71,637**	**53**	**$73,082**	**17**	**$67,132**
Male	70	71,637	53	73,082	17	67,132
Female						
CALENDAR YEAR						
Assistant/Associate Dean	**95**	**52,795**	**69**	**54,636**	**26**	**47,909**
Male	85	54,179	64	55,970	21	48,722
Female	10	41,023	5	37,552	5	44,493
CALENDAR YEAR						
Professor	**432**	**57,911**	**368**	**59,596**	**64**	**48,226**
Male	517	58,115	358	59,727	59	48,337
Female	15	52,234	10	54,892	5	46,918
ACADEMIC YEAR						
Professor	**186**	**42,797**	**116**	**43,842**	**70**	**41,064**
Male	176	42,931	111	44,014	65	41,082
Female	10	40,424	5	40,020	5	40,829
CALENDAR YEAR						
Associate Professor	**461**	**43,698**	**393**	**44,152**	**68**	**41,070**
Male	407	44,058	351	44,406	56	41,876
Female	54	40,982	42	42,032	12	37,308
ACADEMIC YEAR						
Associate Professor	**158**	**34,251**	**103**	**34,441**	**55**	**33,894**
Male	133	34,465	85	34,645	48	34,146
Female	25	33,111	18	33,480	7	32,163
CALENDAR YEAR						
Assistant Professor	**595**	**35,955**	**447**	**36,461**	**148**	**34,423**
Male	425	36,682	343	36,939	82	35,608
Female	170	34,135	104	34,887	66	32,952
ACADEMIC YEAR						
Assistant Professor	**110**	**28,766**	**66**	**29,117**	**44**	**28,239**
Male	78	29,279	49	29,473	29	28,950
Female	32	27,516	17	28,091	15	26,864
CALENDAR YEAR						
Instructor	**67**	**31,765**	**54**	**31,483**	**13**	**32,936**
Male	38	34,049	31	33,131	7	38,118
Female	29	28,771	23	29,261	6	26,890

SOURCE: American Association of Colleges of Pharmacy, Annual Survey of Faculty Salaries, 1986-87.

TABLE 240

NUMBER AND AVERAGE SALARY OF FACULTY IN COLLEGES OF PHARMACY BY TYPE OF INSTITUTION, DEGREE LEVEL AND SEX, 1987

DEGREE & SEX	ALL SCHOOLS		PUBLIC		PRIVATE	
	No.	Salary	No.	Salary	No.	Salary
CALENDAR YEAR						
B.S.	**58**	**$33,950**	**50**	**$34,317**	**8**	**$31,658**
Male	34	36,811	30	37,060	4	34,940
Female	24	29,899	20	30,203	4	28,375
ACADEMIC YEAR						
B.S.	**20**	**25,234**	**9**	**28,187**	**11**	**22,818**
Male	12	26,391	5	28,638	7	24,789
Female	8	23,499	4	27,624	4	19,375
CALENDAR YEAR						
M.S.	**159**	**38,564**	**110**	**39,472**	**49**	**36,527**
Male	114	41,293	89	41,254	25	41,435
Female	45	31,650	21	31,920	24	31,415
ACADEMIC YEAR						
M.S.	**42**	**30,702**	**14**	**30,227**	**28**	**30,939**
Male	23	31,065	8	31,346	15	30,916
Female	19	30,261	6	28,737	13	30,965
CALENDAR YEAR						
Pharm. D.	**564**	**39,700**	**409**	**40,330**	**155**	**38,039**
Male	411	41,171	314	41,425	97	40,348
Female	153	35,750	95	36,709	58	34,178
ACADEMIC YEAR						
Pharm. D.	**43**	**31,586**	**35**	**31,376**	**8**	**32,505**
Male	29	32,494	23	31,930	6	34,653
Female	14	29,707	12	30,314	2	
CALENDAR YEAR						
Ph.D.	**950**	**50,867**	**818**	**51,680**	**132**	**45,830**
Male	880	51,694	763	52,473	117	46,612
Female	70	40,470	55	40,671	15	39,731
ACADEMIC YEAR						
Ph.D.	**364**	**37,541**	**234**	**38,341**	**130**	**36,102**
Male	330	38,105	213	38,789	117	36,859
Female	34	32,071	21	33,791	13	29,293

SOURCE: American Assembly of Collegiate Schools of Business, 1986-87 Salary Survey, December 1986.

TABLE 241

MEAN ANNUAL SALARIES OF BUSINESS SCHOOL FACULTY BY RANK AND SEX, 1986-86

RANK	TOTAL FACULTY		WOMEN FACULTY	
	Number Reporting	Mean Salary	Number Reporting	Mean Salary
Professor	6,020	$49,900	310	$43,100
Associate Professor	6,011	39,800	707	37,300
Assistant Professor	6,285	34,700	1,473	33,200
Instructor	1,987	24,800	818	22,800
New Doctorate	384	37,200	79	35,400
ABD	350	35,700	89	35,000

SOURCE: American Assembly of Collegiate Schools of Business, 1986-87 Salary Survey, December 1986.

TABLE 242

MEAN SALARIES OF BUSINESS FACULTY IN AACSB* MEMBER SCHOOLS BY DISCIPLINE/FIELD AND RANK, 1986-87

DISCIPLINE/FIELD	Professor		Assoc. Professor		Ass't. Professor		Instructor		New Doctorate		ABA	
	No. Reporting	Mean	No. Reporting	Mean	No. Reporting	Mean	No. Reporting	Mean	No. Reporting	Mean	No. Reporting	Mean
Accounting	1,093	$51,500	1,160	$41,600	1,326	$36,400	545	$25,400	58	$41,500	69	$39,100
Economics	866	47,800	786	36,800	707	30,800	130	24,500	48	31,200	35	29,100
Finance	793	52,400	717	42,500	773	38,100	184	25,600	64	40,700	65	37,300
Management	653	48,000	631	38,400	578	33,500	225	24,200	30	36,700	24	34,500
Marketing	716	50,300	676	40,300	766	35,300	233	24,300	44	35,400	62	35,000
Quantitative Methods	344	52,100	344	40,400	333	35,100	116	24,300	26	38,000	16	33,000
Business Education	148	40,100	130	32,300	151	26,900	67	20,600	2	27,000	0	
Business Law/ Legal Environment	170	46,400	265	35,600	288	30,000	37	23,600	14	29,700	3	30,300
Management Information Systems/Computer Information Systems	290	49,100	449	40,200	508	34,700	256	25,200	34	38,900	37	36,700
Production/Operations Management Managerial Economics	163	49,500	178	41,000	192	37,100	37	25,400	14	36,500	9	37,100
Behavioral Science/ Organizational Behavior	219	54,200	216	41,700	218	36,400	29	26,800	9	39,500	9	32,000
International Business	71	51,300	32	42,400	48	36,600	6	29,500	3	39,000	5	32,600
Personnel	130	50,300	110	38,800	87	35,600	11	24,900	9	34,300	4	35,000
Policy/Control	134	53,300	105	42,200	120	37,600	14	30,200	11	39,300	10	36,800
Other	230	46,500	212	38,400	190	31,200	97	23,200	18	34,800	2	37,000
All Combined	**6,020**	**49,900**	**6,011**	**39,800**	**6,285**	**34,700**	**1,987**	**24,800**	**384**	**37,200**	**350**	**35,700**

* American Assembly of Collegiate Schools of Business.

SOURCE: American Assembly of Collegiate Schools of Business, 1986-87 Salary Survey, December 1986.

– TABLE 243

MEAN 9-MONTH SALARIES OF ADMINISTRATIVE PERSONNEL IN AACSB* SCHOOLS BY TYPE OF INSTITUTION AND ADMINISTRATIVE POSITION, 1986-87

ADMINISTRATIVE POSITION	PUBLIC		PRIVATE		ACCREDITED		NONACCREDITED		ALL COMBINED	
	Number Reporting	Mean	Number Reporting	Mean	Number Reporting	Mean	Number Reporting	Mean	Number Reporting	Mean
Dean	9	$51,400	11	$57,700	5	$74,600	15	$48,300	20	$54,900
Associate Dean	18	52,600	11	52,000	19	55,100	10	47,100	29	52,300
Assistant Dean	15	38,200	9	41,400	15	44,500	9	31,000	24	39,400
Academic Dept. Chairman	425	47,600	224	47,300	371	52,400	278	41,000	649	47,500
Director of U.G. Programs	15	39,500	3	48,000	13	42,500	5	36,800	18	40,900
Director of Grad. Programs	33	45,500	9	39,200	24	46,000	18	41,700	42	44,200
Director of Placement	3	29,600	0		3	29,600	0		3	29,600
Director of Co-op Programs	2	28,500	1	25,000	1	29,000	2	26,500	3	27,300
Director of Exec. Development	7	45,100	2	51,000	8	47,000	1	42,000	9	46,400
Director of Internship	2	33,000	1	34,000	2	33,000	1	34,000	3	33,300
Director of Research (Auber Unit)	14	45,500	3	47,300	13	47,200	4	41,200	17	45,800
Director of Research (Other)	7	43,700	2	44,000	6	47,300	3	36,600	9	43,700
Accounting Dept. Chairman	33	50,800	12	47,700	29	53,000	16	44,600	45	50,000
Director of School of Accounting	9	55,700	7	42,800	11	54,200	5	41,000	16	50,100
Other	30	44,000	14	62,200	26	56,300	18	40,200	44	49,700

* American Assembly of Collegiate Schools of Business

SOURCE: College and University Personnel Association, 1986-87 Administrative Compensation Survey, March 1987.

TABLE 244

NUMBER AND MEDIAN SALARIES PAID TO ADMINISTRATIVE OFFICERS IN HIGHER EDUCATION INSTITUTIONS BY POSITION AND CONTROL, 1986-87

POSITION	ALL INSTITUTIONS		MEDIAN SALARY	
	Number	Salary	Public	Private
Chief Executive Officer, System	138	$84,959	$84,959	$82,236
Chief Executive Officer, Single Institution	1,406	70,000	69,875	71,000
Executive Vice President	335	48,968	60,000	55,000
Chief Academic Officer	1,437	54,796	58,266	50,000
Chief Business Officer	1,446	52,000	53,800	49,202
Chief Student Affairs Officer	1,357	45,773	50,110	38,430
Chief Development Officer	845	47,092	48,072	45,600
Chief Public Relations Officer	762	35,424	38,773	31,000
Chief Planning Officer	253	49,000	50,500	44,750
Chief Personnel/Human Resources Officer	705	40,000	42,996	34,570
Chief Health Professions Officer	100	67,392	64,400	82,500
Chief Budgeting Officer	423	44,527	44,979	41,650
General Counsel	197	56,442	55,650	62,993
Registrar	1,196	32,952	37,510	28,100
Director, Church Relations	100	26,130	32,820	25,600
Director, Learning Resources Center	548	34,130	37,169	25,000
Director, Library Services	1,182	37,500	42,400	32,000
Director, Computer Center	906	40,720	44,165	34,775
Director, Computer Center Operations/Academic	356	37,685	40,000	35,000
Director, Computer Center Operations/Administrative	353	38,500	41,468	35,700
Director, Educational Media Services	506	31,164	34,871	23,880
Director, Institutional Research	550	38,280	40,000	33,000
Director, Special & Deferred Gifts	278	36,000	41,000	34,388
Administrator, Grants & Contracts	458	38,892	41,112	35,000
Director, Affirmative Action/Equal Employment	339	39,828	39,669	39,000
Chaplain	295	26,200	28,113	26,100
Comptroller	866	40,000	42,974	36,040
Director, Accounting	613	32,330	35,000	28,090
Director, Internal Audit	329	38,447	38,304	39,000
Bursar	357	29,940	31,260	27,269
Director, Food Services	363	31,028	32,113	30,500
Chief, Physical Plant/Facilities Management Officer	1,252	38,000	40,158	34,000
Director, Student Activities	822	27,214	30,992	21,962
Director, Purchasing	776	31,497	32,550	28,000
Director, Bookstore	865	23,256	26,365	19,915
Director, Campus Security	833	28,940	31,658	25,099
Director, Information Systems	224	44,736	45,337	42,200
Director, News Bureau	284	27,690	29,400	24,000
Director, Auxiliary Services	347	40,044	41,000	35,600
Director, Admissions	1,106	35,020	36,000	33,800
Director, Foreign Students	245	28,434	29,715	24,872
Director, Housing and Food Services			46,656	42,400
Director, Student Financial Aid	1,273	30,899	33,463	27,300
Director, Student Placement	943	29,264	32,098	25,000
Director, Student Counseling	898	34,081	37,095	28,090

SOURCE: College and University Personnel Association, 1986-87 Administrative Compensation Survey, March 1987.

TABLE 244 (continued)

NUMBER AND MEDIAN SALARIES PAID TO ADMINISTRATIVE OFFICERS IN HIGHER EDUCATION INSTITUTIONS BY POSITION AND CONTROL, 1986-87

POSITION	ALL INSTITUTIONS		MEDIAN SALARY	
	Number	Salary	Public	Private
Director, Student Union	344	$32,639	$36,088	$27,288
Director, Studen Health Services (Physician Admin.)	297	61,509	63,900	48,495
Director, Student Health Services (Nurse Admin.)	543	22,300	25,793	20,000
Director, Student Housing	629	27,900	32,832	23,665
Director, Athletics	829	40,000	44,000	34,665
Director, Campus Recreation/Intermurals	369	26,724	29,364	22,550
Director, Alumni Affairs	748	28,680	32,159	25,116
Director, Information Office	416	30,000	32,276	27,250
Director, Community Services	258	35,000	36,277	28,220
Administrator, Hospital Medical Center	47	94,700	92,940	100,006
Director, Publications	389	29,500	32,643	26,028
Director, Risk Management & Insurance	110	41,500	42,100	41,500
Chief Planning & Budget Officer	86	52,998	58,538	46,000
Chief Development & Public Relations Officer	205	54,000	55,000	53,141
Director, Personnel & Affirmative Action	259	33,600	34,329	
Director, Admissions & Financial Aid	152	40,000	40,132	39,541
Director, Development & Alumni Affairs	116	38,713	39,650	37,400
Director, Admissions & Registrar	226	39,853	41,128	30,788
Dean, Architecture	66	64,500		61,300
Dean, Agriculture	82	69,756	69,756	
Dean, Arts and Letters	117	48,936	48,936	42,800
Dean, Arts and Sciences	401	57,681	57,681	57,024
Dean, Business	626	55,790	55,698	55,790
Dean, Communications				56,500
Dean, Continuing Education	550	44,616	45,102	42,000
Dean, Denistry	46	94,329	89,336	96,500
Dean, Education	408	55,259	58,000	42,200
Dean, Engineering	259	68,496	68,900	68,000
Dean, Extension	86	54,430	54,430	
Dean, Fine Arts	177	51,151	54,564	40,000
Dean, Graduate Programs	343	57,680	59,600	50,891
Dean, Health Related Professions	182	50,003	50,003	55,450
Dean, Home Economics				33,600
Dean, Humanities	195	43,500	45,874	33,150
Dean, Law	134	89,000	86,620	90,000
Dean, Mathematics	96	40,750	41,853	32,000
Dean, Medicine	81	120,000	109,920	145,000
Dean, Music	69	55,640	62,250	47,500
Dean, Nursing	301	50,000	53,457	43,990
Dean, Occupational Studies/Voc. Educ./Technology	250	45,000	45,000	
Dean, Pharmacy	58	70,828	76,309	66,000
Dean, Sciences	262	48,168	49,658	35,435
Dean, Social Sciences	198	42,400	44,750	31,183
Dean, Social Work	74	63,305	66,096	55,000
Dean, Special Programs				35,738

SOURCE: College and University Personnel Association, 1986-87 Administrative Compensation Survey, March 1987.

TABLE 245

NUMBER AND MEDIAN SALARIES PAID TO ADMINISTRATIVE OFFICERS IN HIGHER EDUCATION INSTITUTIONS* BY POSITION, MINORITY/NON-MINORITY STATUS AND SEX, 1986-87

POSITION	Non-Minority		Minority		Men		Women	
	No.	Salary	No.	Salary	No.	Salary	No.	Salary
Chief, Executive Officer, System	94	$88,000	11	$82,000		$		$
Chief Executive Officer, Single Institution	603	84,454	49	71,000	611	83,600	44	79,994
Executive Vice President	179	68,680	17	57,338	181	68,500	16	57,338
Chief Academic Officer	639	67,464	49	59,866	609	66,921	81	64,000
Chief Business Officer	669	64,037	45	53,560	686	63,410	31	57,844
Chief Student Affairs Officer	573	54,800	110	53,800	550	55,000	137	52,980
Chief Development Officer	419	56,054	33	50,000	384	57,245	69	45,193
Chief Public Relations Officer	387	44,000	30	37,803	275	46,031	145	40,000
Chief Planning Officer	164	55,000	16	40,052	148	55,000	33	50,000
Director, Personnel/Human Resources	467	44,000	61	42,339	370	46,200	162	38,178
Chief Health Professions Officer	72	85,928	6	46,710	62	98,940	16	45,116
Chief Budgeting Officer	323	47,267	30	40,265	291	47,728	63	40,250
General Counsel	166	58,984	12	52,000	136	59,400	45	56,054
Registrar	562	39,697	46	34,065	407	41,800	202	34,521
Director, Church Relations	34	35,500	5	35,304				
Director, Learning Resources Center	209	40,121	37	35,873	174	41,000	75	35,968
Director, Library Services	563	47,900	44	41,860	408	48,624	202	43,008
Director, Computer Center	493	48,900	35	44,373	481	49,025	49	41,090
Director, Computer Center Operations/ Academic	249	41,691	9	38,289	228	41,691	31	38,500
Director, Computer Center Operations/ Administrative	223	43,600	16	39,535	203	44,310	36	37,685
Director, Educational Media Services	306	34,759	23	33,709	282	35,352	48	29,100
Director, Institutional Research	363	42,500	28	38,000	272	44,373	123	36,061
Director, Special & Deferred Gifts	179	40,000	6	40,000	144	41,000	42	35,112
Administrator, Grants & Contracts	339	42,800	34	31,260	254	45,312	120	34,308
Director, Affirmative Action/ Equal Employment	122	38,800	169	41,800	116	43,020	176	38,880
Chaplain	141	31,750	7	26,400	132	31,650	17	29,000
Comptroller	512	46,000	36	43,400	456	47,434	94	37,695
Director, Accounting	340	37,336	40	36,050	261	39,988	123	32,520
Director, Internal Audit	269	39,068	26	40,752	223	41,000	74	30,960
Bursar	231	33,750	24	28,350	147	37,500	109	27,580
Director, Food Services	199	37,538	13	31,028	162	37,860	52	33,600
Chief Physical Plant/ Facilities Management Officier	643	46,077	39	38,000	678	45,370	6	68,500
Director, Student Activities	397	31,385	72	31,800	290	33,228	179	28,016
Director, Purchasing	518	34,577	39	32,880	440	36,050	122	28,036
Director, Bookstore	426	29,300	26	24,096	300	32,258	153	24,444
Director, Campus Security	529	33,200	79	30,000	605	32,520	8	30,555
Director, Information Systems	162	47,850	7	40,000	147	49,563	23	35,983
Director, News Bureau	210	29,196	7	29,328	116	30,804	100	27,075
Director, Auxiliary Services	247	43,590	23	34,778	239	43,889	30	34,680
Director, Admissions	481	41,952	57	35,969	406	42,400	134	35,873
Director, Foreign Students	167	29,335	33	26,222	107	41,721	94	25,923
Director, International Studies Education	125	40,000	8	41,249	84	45,100	50	31,920
Director, Student Financial Aid	554	36,532	115	35,586	463	38,160	210	32,136
Director, Student Placement	526	33,114	55	33,690	326	35,400	257	29,500
Director, Student Counseling	469	37,800	72	37,400	365	39,513	181	33,564
Director, Student Union	264	34,804	28	28,000	226	36,218	68	28,500
Director, Student Health Services (Physician Admin.)	**241**	**64,748**	**15**	**55,029**	**200**	**63,900**	**59**	**63,647**

SOURCE: College and University Personnel Association, 1986-87 Administrative Compensation Survey, March 1987.

TABLE 245 (continued)

NUMBER AND MEDIAN SALARIES PAID TO ADMINISTRATIVE OFFICERS IN HIGHER EDUCATION INSTITUTIONS* BY POSITION, MINORITY/NON-MINORITY STATUS AND SEX, 1986-87

POSITION	Non-Minority		Minority		Men		Women	
	No.	Salary	No.	Salary	No.	Salary	No.	Salary
Director, Student Health Services (Nurse Admin.)	292	$25,280	34	$24,204	6	$30,765	322	$25,000
Director, Student Housing	399	32,000	38	29,000	294	33,538	144	27,461
Director, Athletics	475	46,800	29	41,120	487	46,800	20	36,532
Director, Campus Recreation/ Intermurals	261	29,246	29	28,705	236	29,246	55	26,530
Director, Alumni Affairs	445	33,074	34	29,704	279	37,000	202	28,789
Director, Information Office	269	34,063	13	38,859	149	36,114	135	31,577
Director, Community Services	107	38,908	15	46,920	65	43,737	58	35,150
Director, Publications	282	31,501	14	33,000	135	35,085	163	29,107
Director, Risk Management and Insurance					83	42,800	21	38,500
Chief Planning & Budget Officer					55	62,328	8	49,950
Chief Development & Public Relations Officer	119	64,100	5	54,000	105	64,253	20	58,370
Director, Personnel & Affirmative Action	108	39,972	30	37,512	72	43,150	67	35,304
Director, Admissions & Financial Aid	74	45,686	5	43,000	66	47,492	14	39,541
Director, Housing & Food Services					36	47,350	7	39,498
Director, Development & Alumni Affairs					45	46,313	17	36,117
Director, Admissions & Registrar	108	45,972		36,372	101	46,103	20	38,706
Dean Architecture	52	67,000	5	61,813				
Dean Agriculture	61	71,820	10	50,989				
Dean, Arts and Letters					67	57,000	11	50,000
Dean, Arts and Sciences	294	61,710	24	53,300	280	61,710	39	56,000
Dean, Business	415	62,496	22	52,153	410	62,837	30	45,166
Dean, Communications					57	61,105	9	47,456
Dean, Continuing Education	304	49,920	32	49,000	260	51,810	79	45,000
Dean, Education	282	59,388	34	55,266	259	59,971	59	56,751
Dean, Engineering	195	73,092	13	70,700				
Dean, Extension	55	59,482	6	55,795	57	59,740	5	39,260
Dean, Fine Arts	117	57,809	11	51,912	114	58,195	15	51,000
Dean, Graduate Programs	275	60,252	23	62,085	251	61,000	48	54,000
Dean, Health Related Professions	105	56,774	12	55,462	80	59,240	38	50,346
Dean, Home Economics					11	70,400	39	61,500
Dean, Humanities	85	54,941	7	46,700	75	55,762	17	39,100
Dean, Instruction					13	53,269	6	46,295
Dean, Law					116	90,000	10	85,000
Dean, Library & Information Sciences	61	54,122	6	52,000	49	55,965	18	52,000
Dean, Mathematics	44	46,367	6	39,000	44	56,367	7	46,050
Dean, Nursing	181	58,320	21	55,500	5	56,633	197	58,320
Dean, Occupational Studies/ Voc. Educ./Technology	110	51,025	13	48,380	108	51,025	16	48,475
Dean, Sciences	142	55,200	18	49,641	147	56,000	14	49,658
Dean, Social Sciences	90	50,184	12	45,000	83	49,607	20	48,135
Dean, Social Work	47	66,096	19	66,500	47	68,628	29	62,000
Dean, Special Programs	41	47,732	14	41,004	38	43,299	18	46,972
Dean, Undergraduate Programs	58	55,000	5	51,984	46	56,700	18	51,928

* With budgets equal to or above median of $12,453,940.

SOURCE: College and University Personnel Association, 1986-87 Administrative Compensation Survey, March 1987.

TABLE 246

NUMBER AND MEDIAN SALARIES PAID TO ADMINISTRATIVE OFFICERS IN HIGHER EDUCATION INSTITUTIONS* BY POSITION, MINORITY/NON-MINORITY STATUS AND SEX, 1986-87

POSITION	Non-Minority		Minority		Men		Women	
	No.	Salary	No.	Salary	No.	Salary	No.	Salary
Chief Executive Officer, Single Institution	673	$60,100	50	$58,656	640	$60,000	89	$60,000
Executive Vice President	117	47,465	12	34,650	114	47,465	17	42,640
Chief Academic Officer	643	44,991	52	47,000	566	45,536	35	42,048
Chief Business Officer	651	43,000	44	36,082	621	43,601	80	34,230
Chief Student Affairs Officer	564	37,481	74	35,484	484	39,000	157	32,760
Chief Development Officer	347	38,195	16	37,080	261	40,000	106	34,000
Chief Public Relations Officer	305	25,967	12	25,405	142	30,000	179	24,000
Chief Planning Officer	57	37,800	9	27,000	48	39,000	20	30,700
Director, Personnel/Human Resources	136	29,050	17	25,405	66	32,597	88	25,200
Chief Health Professions Officer					11	50,000	10	32,000
Chief Budgeting Officer	56	35,126	5	25,405	45	36,542	16	30,000
Registrar	511	26,640	45	24,046	239	31,400	322	22,717
Director, Learning Resources Center	265	29,730	15	29,754	131	32,062	153	27,000
Director, Library Services	504	28,890	30	26,400	267	30,780	272	26,500
Director, Computer Center	327	31,324	21	31,500	293	32,316	60	23,409
Director, Computer Center Operations/ Academic	78	27,500	9	27,238	63	28,000	25	24,000
Director, Computer Center Operations/ Administrative	101	29,000	9	25,000	79	32,000	31	23,800
Director, Educational Media Services	148	23,601	16	25,523	109	25,574	54	20,638
Director, Institutional Research	124	30,375	13	29,038	78	34,128	59	25,984
Director, Special & Deferred Gifts	78	28,100	5	20,000	59	28,460	25	25,745
Administrator, Grants & Contracts	54	29,500	11	31,000	34	32,460	32	25,405
Director, Affirmative Action/ Equal Employment	20	22,000	18	32,421	16	32,421	22	22,000
Chaplain	133	22,000	5	23,747	116	22,600	22	18,666
Comptroller	278	30,700	17	29,300	180	33,046	118	28,602
Director, Accounting	188	24,684	23	19,606	97	28,485	116	21,264
Director, Internal Audit	13	31,263	8	30,374	12	29,028	9	31,930
Bursar	75	21,900	10	19,120	29	26,500	59	20,124
Director, Food Services	123	24,000	13	20,425	73	25,000	65	20,000
Chief Physical Plant/ Facilities Management Officier	508	29,072	32	29,750	532	29,262	12	22,650
Director, Student Activities	284	21,480	40	24,246	166	24,480	159	19,440
Director, Purchasing	170	23,970	29	20,794	109	26,500	91	20,300
Director, Bookstore	359	18,134	31	18,000	113	20,952	279	17,101
Director, Campus Security	165	20,139	39	19,850	200	20,139	6	18,000
Director, Information Systems					30	36,480	17	27,252
Director, News Bureau					18	22,106	38	20,382
Director, Auxiliary Services	68	28,447	6	27,500	51	30,864	23	24,000
Director, Admissions	411	29,479	34	27,500	296	33,040	151	27,000
Director, Foreign Students	27	21,895	11	23,812	18	22,378	20	21,200
Director, International Studies Education					11	30,000	7	27,225
Director, Student Financial Aid	497	24,919	68	23,844	268	28,305	300	22,500
Director, Student Placement	305	23,498	32	23,000	127	25,795	210	21,499
Director, Student Counseling	284	27,280	36	25,008	161	30,772	164	24,235
Director, Student Union	35	23,400	6	20,000	26	24,168	15	20,035
Director, Student Health Services (Physician Admin.)	24	20,399	6	19,440	17	27,000	13	19,440

210 SOURCE: College and University Personnel Association, 1986-87 Administrative Compensation Survey, March 1987.

TABLE 246 (continued)

NUMBER AND MEDIAN SALARIES PAID TO ADMINISTRATIVE OFFICERS IN HIGHER EDUCATION INSTITUTIONS* BY POSITION, MINORITY/NON-MINORITY STATUS AND SEX, 1986-87

POSITION	Non-Minority		Minority		Men		Women	
	No.	Salary	No.	Salary	No.	Salary	No.	Salary
Director, Student Health Services (Nurse Admin.)	189	$17,244	17	$17,972	9	$17,000	199	$17,290
Director, Student Housing	156	19,710	21	18,000	86	20,277	93	18,500
Director, Athletics	285	30,262	17	25,674	273	30,500	31	22,365
Director, Campus Recreation/ Intermurals	64	20,475	6	15,340	53	20,195	18	20,400
Director, Alumni Affairs	235	21,522	11	21,116	91	24,645	156	20,000
Director, Information Office					45	23,500	74	21,231
Director, Community Services	107	31,568	15	31,949	67	35,000	56	29,650
Director, Publications					39	23,217	45	22,500
Chief Planning & Budget Officer					13	40,438	6	37,315
Chief Development & Public Relations Officer					40	36,600	34	34,000
Director, Personnel & Affirmative Action	94	28,834	20	26,600	46	33,759	68	25,200
Director, Admissions & Financial Aid					47	32,945	22	28,665
Director, Development & Alumni Affairs					33	35,100	18	28,284
Director, Admissions & Registrar	90	33,500	8	26,571	67	34,700	33	28,941
Dean, Arts and Letters					28	40,000	8	36,480
Dean, Arts and Sciences					59	40,900	14	38,000
Dean, Business	153	39,092	12	33,000	136	39,316	30	33,600
Dean, Communications					12	32,630	5	34,592
Dean, Continuing Education	175	36,544	17	35,101	129	37,077	63	35,000
Dean, Education	74	36,736	8	26,400	57	39,600	25	31,542
Dean, Extension					17	32,200	5	31,123
Dean, Fine Arts	38	34,000	6	35,424	33	35,235	12	32,000
Dean, Graduate Programs					22	35,688	15	37,100
Dean, Health Related Professions					24	38,115	35	37,000
Dean, Humanities					59	35,915	36	36,773
Dean, Instruction					19	41,316	5	31,961
Dean, Library & Information Sciences					5	43,289	5	31,083
Dean, Mathematics	34	35,609	6	33,075	31	35,286	9	38,000
Dean, Occupational Studies/ Voc. Educ./Technology	111	40,448	5	34,674	101	40,119	16	38,828
Dean, Sciences	83	36,419	7	31,458	70	37,935	20	28,608
Dean, Social Sciences	80	35,700	8	33,744	67	36,093	21	31,183
Dean, Special Programs	39	33,700	8	29,004	24	33,548	23	31,072
Dean, Undergraduate Programs					9	42,670	9	42,859

* With budgets below median of $12,453,940.

SOURCE: National Education Association, Estimates of School Statistics 1986-87, April 1987.

TABLE 247

ESTIMATED AVERAGE ANNUAL SALARIES OF ELEMENTARY AND SECONDARY INSTRUCTIONAL, STAFF AND PUBLIC SCHOOL CLASSROOM TEACHERS BY STATE, 1986-87

STATE	Instructional Staff	CLASSROOM TEACHERS			% Increase 1985-86
		Elementary School	Secondary School	All Teachers	
United States	**$27,878**	**$26,141**	**$27,351**	**$26,704**	**5.9**
Alabama	24,480	23,500	23,500	23,500	2.0
Alaska	46,082	43,714	44,138	43,970	6.0
Arizona	28,971	26,124	26,614	26,280	6.5
Arkansas	21,067	19,356	20,483	19,951	2.1
California	32,230	30,660	32,050	31,170	7.0
Colorado	28,400	26,838	28,032	27,388	5.8
Connecticut	30,193	28,460	29,553	28,902	8.6
Delaware	28,440	26,656	28,219	27,467	11.5
District of Columbia	41,467	33,797	33,797	33,797	1.8
Florida	25,552	24,059	23,050	23,785	6.9
Georgia	25,600	23,793	24,610	24,200	5.0
Hawaii	27,646	26,815	26,815	26,815	3.8
Idaho	22,299	20,753	22,258	21,469	2.4
Illinois	29,399	27,317	30,564	28,430	5.7
Indiana	26,557	25,131	26,264	25,684	5.6
Iowa	23,434	21,662	23,400	22,603	4.2
Kansas	25,297	23,440	23,640	23,550	4.0
Kentucky	23,560	22,073	23,691	22,612	7.9
Louisiana	21,736	20,966	21,882	21,280	4.0
Maine	21,943	20,761	22,196	21,257	8.5
Maryland	29,940	27,856	29,615	28,700	7.1
Massachusetts	30,810	25,906	28,726	28,410	6.0
Michigan	32,800	31,315	31,858	31,500	5.0
Minnesota	30,190	28,460	29,780	29,140	6.5
Mississippi	20,050	19,275	19,925	19,575	6.0
Missouri	24,383	22,695	24,281	23,468	6.9
Montana	24,370	22,600	24,460	23,206	3.2
Nebraska	24,138	21,083	23,010	22,063	5.4
Nevada	27,340	25,500	26,630	26,030	1.6
New Hampshire	22,625	21,401	21,304	21,869	7.9
New Jersey	30,770	28,625	29,365	28,927	6.5
New Mexico	26,892	23,200	24,800	23,977	9.9
New York	33,500	31,570	33,510	32,620	7.0
North Carolina	24,395	23,670	23,925	23,775	6.4
North Dakota	22,533	21,655	22,180	21,848	5.0
Ohio	27,379	25,924	26,803	26,317	5.2
Oklahoma	22,770	21,379	22,789	22,060	3.0
Oregon	28,000	26,370	27,410	26,800	4.4
Pennsylvania	28,042	27,363	27,489	27,429	6.1
Rhode Island	32,026	30,768	31,701	31,079	5.5
South Carolina	24,043	22,440	24,094	23,039	6.8
South Dakota	19,518	18,718	18,881	18,781	3.8
Tennessee	23,231	22,650	22,813	22,720	6.2
Texas	26,255	24,606	26,091	25,308	4.5
Utah	26,908	22,657	24,337	23,374	3.4
Vermont	23,293	21,331	22,293	21,835	5.0
Virginia	26,401	24,604	26,589	25,473	10.3
Washington	28,746	27,080	28,058	27,527	5.0
West Virginia	22,428	21,274	21,665	21,446	4.0
Wisconsin	29,000	27,700	29,300	28,206	7.1
Wyoming	28,230	27,513	29,195	27,708	1.8

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SCIENTIFIC, ENGINEERING, TECHNICAL MANPOWER COMMENTS, periodical, 10 issues per year, 1 year, $65; 2 years, $125; 3 years $185. Free to members.

A monthly digest of current developments affecting the recruitment, training and utilization of scientific, engineering and technical manpower. Special sections include current information on supply and demand, salaries, women and minorities in science, education, pending legislation, federal agency activities, and new publications of interest to producers and users of technical manpower.

THE TECHNOLOGICAL MARKETPLACE: Supply and Demand for Scientists and Engineers, Third Edition, May 1985, Members $20, Non-members $25

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OPPORTUNITIES IN SCIENCE AND ENGINEERING - A Chartbook Presentation, Second Edition, November 1984, Members $12.50, Non-members $15

This 96 page presentation includes information on the present supply of men and women scientists and engineers, detailing such characteristics as their educational preparation, labor force participation and employment opportunities, and their starting and advanced salary levels. The future supply of and demand for scientists and engineers are examined by field under different scenarios for various periods in the future. Each page of text is accompanied by a full page chart outlining some of the statistical information included. The charts are suitable for reproduction.

SCIENTIFIC MANPOWER - 1987 AND BEYOND: Today's Budgets - Tomorrow's Workforce, January 1987, Members $15, Non-members $20

Proceedings of a symposium examining the effect of federal, state, local, and corporate budgets on today's and tomorrow's scientists and engineers.

THE INTERNATIONAL FLOW OF SCIENTIFIC TALENT: Data, Policies and Issues, September, 1985, Members $12.50, non-members $15

Proceedings of a symposium exploring the increasing participation of foreign nationals in U.S. educational institutions and workforce. Tables and charts supplement the text.

THE SCIENCE AND ENGINEERING TALENT POOL, May 1984, Members $8.50, non-members $10.

Proceedings of a symposium examining from various perspectives the characteristics of the talent pool available through this century in science and engineering.

GUIDE TO DATA ON SCIENTISTS AND ENGINEERS, April 1984, free to libraries.

This 275 page reference book consists of three indexes to science and engineering manpower data published by 49 organizations concerned with some phase of science or engineering manpower. The Bibliographic Index describes each publishing organization, outlines the manpower surveys it conducts, and lists detail of data tables in each of its publications covering 1973-83. A Field Index and Year of Data Index are quick guides for any data characteristic, which reference back to the Bibliographic Index.

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